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United States Life Tables, 2013

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Abstract

Objectives—This report presents complete period life tables for the United States by race, Hispanic origin, and sex, based on age-specific death rates in 2013.

Methods—Data used to prepare the 2013 life tables are 2013 final mortality statistics; July 1, 2013 population estimates based on the 2010 decennial census; and 2013 Medicare data for persons aged 66–99. The methodology used to estimate the 2013 life tables was first implemented with data year 2008. The methodology used to estimate the life tables for the Hispanic population remains unchanged from that developed for the publication of life tables by Hispanic origin for data year 2006.

Results—In 2013, the overall expectation of life at birth was 78.8 years, unchanged from 2012. Between 2012 and 2013, life expectancy at birth remained the same for both males (76.4) and females (81.2), for the black population (75.5), the Hispanic population (81.9), and the non-Hispanic black population (75.1). Life expectancy at birth declined for both the white population (79.1 to 79.0) and the non-Hispanic white population (78.9 to 78.8).

Keywords: life expectancy • survival • death rates • race • Hispanic origin

Introduction

There are two types of life tables: the cohort (or generation) life table and the period (or current) life table. The cohort life table presents the mortality experience of a particular birth cohort—all persons born in the year 1900, for example—from the moment of birth through consecutive ages in successive calendar years. Based on age-specific death rates observed through consecutive calendar years, the cohort life table reflects the mortality experience of an actual cohort from birth until no lives remain in the group. To prepare just a single complete cohort life table requires data over many years. It is usually not feasible to construct cohort life tables entirely on the basis of observed data for real cohorts due to data unavailability or incompleteness (1). For example, a life table representation of the mortality experience of a cohort of persons born in 1970 would

require the use of data projection techniques to estimate deaths into the future (2,3).

Unlike the cohort life table, the period life table does not represent the mortality experience of an actual birth cohort. Rather, the period life table presents what would happen to a hypothetical cohort if it experienced throughout its entire life the mortality conditions of a particular period in time. For example, a period life table for 2013 assumes a hypothetical cohort that is subject throughout its lifetime to the age-specific death rates prevailing for the actual population in 2013. The period life table may thus be characterized as rendering a “snapshot” of current mortality experience and shows the long-range implications of a set of age-specific death rates that prevailed in a given year. In this report, the term “life table” refers only to the period life table and not to the cohort life table.

Life tables can be classified in two ways according to the length of the age interval in which data are presented. A complete life table contains data for every single year of age. An abridged life table typically contains data by 5- or 10-year age intervals. A complete life table can be aggregated into 5- or 10-year age groups (refer to the [Technical Notes](#) at the end of this report for instructions). Other than the decennial life tables, U.S. life tables based on data prior to 1997 are abridged life tables constructed by reference to a standard table (4). This report presents complete period life tables by race, Hispanic origin, and sex.

Data and Methods

The data used to prepare the U.S. life tables for 2013 are final numbers of deaths for the year 2013; July 1, 2013 population estimates based on the 2010 decennial census; and age-specific death and population counts for Medicare beneficiaries aged 66–99 for the year 2013 from the Centers for Medicare & Medicaid Services. Data from the Medicare program are used to supplement vital statistics and census data for ages 66 and over. The U.S. life tables by Hispanic origin are based on death rates that have been adjusted for race and ethnicity misclassification on death certificates using classification ratios (or correction factors) generated from an updated evaluation of race and Hispanic-origin misclassification



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on death certificates in the United States (5). (See [Technical Notes](#) for a detailed description of the data sets and methodology used to estimate Hispanic-origin life tables.)

Expectation of life

The most frequently used life table statistic is life expectancy (e_x), which is the average number of years of life remaining for persons who have attained a given age (x). Life expectancy and other life table values for each age in 2013 are shown for the total population by race, Hispanic origin, and sex in [Tables 1–18](#). Life expectancy is summarized by age, race, Hispanic origin, and sex in [Table A](#).

Life expectancy at birth (e_0) for 2013 for the total population was 78.8 years. This represents the average number of years that the members of the hypothetical life table cohort can expect to live at the time of birth ([Table A](#)).

Survivors to specified ages

Another way to assess the longevity of the period life table cohort is to determine the proportion that survives to specified ages. The l_x column of the life table provides the data for computing this proportion. [Table B](#) summarizes the number of survivors by age, race, Hispanic origin, and sex. To illustrate, 57,879 persons out of the original 2013 hypothetical life table cohort of 100,000 (or 57.9%) were alive at exact age 80. In other words, the probability that a person will survive from birth to age 80, given 2013 age-specific mortality, is 57.9%. Probabilities of survival can be calculated at any age by dividing the number of survivors at the terminal age by the number at the beginning age. For example, to calculate the probability of surviving from age 20 to age 85, one would divide the number of survivors at age 85 (42,192) by the number of survivors at age 20 (98,953), which results in a 42.6% probability of survival.

Explanation of the columns of the life table

Column 1. Age (between x and $x + 1$)—Shows the age interval between the two exact ages indicated. For instance, “20–21” means the 1-year interval between the 20th and 21st birthdays.

Column 2. Probability of dying (q_x)—Shows the probability of dying between ages x and $x + 1$. For example, for males in the age interval 20–21 years, the probability of dying is 0.001024 ([Table 2](#)). This column forms the basis of the life table; all subsequent columns are derived from it.

Column 3. Number surviving (l_x)—Shows the number of persons from the original hypothetical cohort of 100,000 live births who survive to the beginning of each age interval. The l_x values are computed from the q_x values, which are successively applied to the remainder of the original 100,000 persons still alive at the beginning of each age interval. Thus, out of 100,000 female babies born alive, 99,524 will complete the first year of life and enter the second; 99,322 will reach age 10; 99,132 will reach age 20; and 48,940 will live to age 85 ([Table 3](#)).

Column 4. Number dying (d_x)—Shows the number dying in each successive age interval out of the original 100,000 live births. For example, out of 100,000 males born alive, 651 will die in the first year of life; 101 between ages 20 and 21; and 1,023 after reaching

age 100 ([Table 2](#)). Each figure in column 4 is the difference between two successive figures in column 3.

Column 5. Person-years lived (L_x)—Shows the number of person-years lived by the hypothetical life table cohort within an age interval x to $x + 1$. Each figure in column 5 represents the total time (in years) lived between two indicated birthdays by all those reaching the earlier birthday. Thus, the figure 98,733 for males in the age interval 20–21 is the total number of years lived between the 20th and 21st birthdays by the 98,784 males (column 3) who reached their 20th birthday out of 100,000 males born alive ([Table 2](#)).

Column 6. Total number of person-years lived (T_x)—Shows the total number of person-years that would be lived after the beginning of the age interval x to $x + 1$ by the hypothetical life table cohort. For example, the figure 5,658,717 is the total number of years lived after attaining age 20 by the 98,784 males reaching that age ([Table 2](#)).

Column 7. Expectation of life (e_x)—The expectation of life at any given age is the average number of years remaining to be lived by those surviving to that age, based on a given set of age-specific rates of dying. It is derived by dividing the total person-years that would be lived beyond age x by the number of persons who survived to that age interval (T_x / l_x). Thus, the average remaining lifetime for males who reach age 20 is 57.3 years (5,658,717 divided by 98,784) ([Table 2](#)).

Results

Life expectancy in the United States

[Tables 1–18](#) show complete life tables for 2013 by race (white and black), Hispanic origin, and sex. [Table A](#) summarizes life expectancy by age, race, Hispanic origin, and sex. Life expectancy at birth for 2013 represents the average number of years that a group of infants would live if they were to experience throughout life the age-specific death rates prevailing in 2013. In 2013, life expectancy at birth was 78.8 years, which was unchanged from 2012.

Changes in mortality levels by age and cause of death can have a major effect on changes in life expectancy. While changes in causes of death occurred between 2012 and 2013, life expectancy at birth for the total population did not change. Decreases in mortality from cancer, homicide, stroke, and heart disease were offset by increases in mortality from Influenza and pneumonia, chronic lower respiratory diseases, Septicemia, and unintentional injuries (6). Life expectancy at birth for both males and females did not change between 2012 and 2013. For males, decreases in mortality from cancer, homicide, Alzheimer’s disease, and stroke were offset by increases in mortality from Influenza and pneumonia, hypertension, Chronic liver disease and cirrhosis, and Septicemia. Similarly for the female population, decreases in mortality for cancer, heart disease, stroke, and Congenital malformations were offset by increases in mortality from Influenza and pneumonia, Chronic lower respiratory diseases, Septicemia, and perinatal conditions (6).

The difference in life expectancy between the sexes was 4.8 years in 2013, unchanged from the difference in 2012. From 1900 to 1975, the difference in life expectancy between the sexes increased from 2.0 years to 7.8 years ([Table 19](#)). The increasing gap during these years is attributed to increases in male mortality due to ischemic heart disease and lung cancer, both of which increased

Table A. Expectation of life, by race, Hispanic origin, age, and sex: United States, 2013

Age	All races and origins			White			Black			Hispanic ¹			Non-Hispanic white ¹			Non-Hispanic black ¹		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
0	78.8	76.4	81.2	79.0	76.7	81.4	75.5	72.3	78.4	81.9	79.2	84.2	78.8	76.5	81.2	75.1	71.9	78.1
1	78.3	75.9	80.6	78.5	76.1	80.7	75.4	72.2	78.2	81.3	78.6	83.6	78.2	75.9	80.5	75.0	71.8	77.9
5	74.4	72.0	76.7	74.5	72.2	76.8	71.5	68.3	74.3	77.3	74.7	79.7	74.3	72.0	76.6	71.1	67.9	74.0
10	69.4	67.0	71.7	69.6	67.3	71.8	66.5	63.4	69.4	72.4	69.7	74.7	69.3	67.0	71.6	66.2	63.0	69.1
15	64.5	62.1	66.8	64.6	62.3	66.9	61.6	58.4	64.4	67.4	64.8	69.8	64.4	62.1	66.7	61.2	58.1	64.1
20	59.6	57.3	61.9	59.7	57.5	62.0	56.8	53.7	59.5	62.5	59.9	64.8	59.5	57.3	61.7	56.4	53.3	59.2
25	54.8	52.6	57.0	55.0	52.8	57.1	52.1	49.2	54.7	57.7	55.2	59.9	54.8	52.6	56.9	51.8	48.8	54.4
30	50.1	48.0	52.1	50.2	48.1	52.2	47.4	44.6	49.9	52.9	50.5	55.0	50.0	47.9	52.0	47.1	44.3	49.6
35	45.4	43.3	47.3	45.5	43.5	47.4	42.8	40.1	45.1	48.1	45.7	50.2	45.3	43.3	47.2	42.5	39.8	44.8
40	40.7	38.7	42.6	40.8	38.8	42.6	38.2	35.6	40.4	43.3	41.0	45.3	40.6	38.7	42.5	38.0	35.4	40.2
45	36.1	34.1	37.9	36.2	34.3	37.9	33.7	31.2	35.9	38.6	36.3	40.5	36.0	34.2	37.8	33.5	31.0	35.6
50	31.6	29.7	33.3	31.7	29.9	33.4	29.4	27.0	31.5	34.0	31.8	35.8	31.6	29.8	33.3	29.2	26.8	31.2
55	27.3	25.6	28.9	27.4	25.7	28.9	25.3	23.0	27.3	29.6	27.5	31.3	27.3	25.6	28.8	25.2	22.8	27.1
60	23.2	21.7	24.6	23.3	21.7	24.6	21.6	19.5	23.3	25.3	23.4	26.8	23.2	21.7	24.6	21.4	19.3	23.1
65	19.3	17.9	20.5	19.3	18.0	20.5	18.1	16.2	19.5	21.3	19.5	22.5	19.3	17.9	20.4	18.0	16.1	19.4
70	15.6	14.4	16.6	15.6	14.4	16.5	14.8	13.2	15.9	17.4	15.8	18.4	15.5	14.4	16.5	14.7	13.1	15.8
75	12.2	11.2	12.9	12.1	11.1	12.9	11.8	10.4	12.7	13.7	12.4	14.5	12.1	11.1	12.9	11.7	10.3	12.6
80	9.1	8.3	9.7	9.1	8.3	9.7	9.1	8.0	9.7	10.4	9.3	11.0	9.1	8.2	9.6	9.0	8.0	9.7
85	6.6	5.9	7.0	6.5	5.9	6.9	6.8	6.0	7.2	7.6	6.7	8.0	6.5	5.8	6.9	6.8	5.9	7.2
90	4.6	4.1	4.8	4.5	4.0	4.7	5.1	4.4	5.3	5.3	4.7	5.5	4.5	4.0	4.7	5.1	4.4	5.3
95	3.2	2.9	3.3	3.1	2.8	3.2	3.8	3.3	3.8	3.7	3.3	3.8	3.1	2.8	3.2	3.8	3.3	3.9
100	2.3	2.1	2.3	2.2	2.0	2.3	2.9	2.5	2.8	2.7	2.3	2.6	2.2	2.0	2.3	2.9	2.5	2.9

¹Life tables by Hispanic origin are based on death rates that have been adjusted for race and ethnicity misclassification on death certificates. Updated classification ratios were applied; see Technical Notes.

SOURCE: NCHS, National Vital Statistics System, Mortality.

largely as the result of men's early and widespread adoption of cigarette smoking (7,8). Between 1979 and 2010, the difference in life expectancy between the sexes narrowed from 7.8 years to 4.8 years (Table 19). The general decline in the sex difference since 1979 reflects proportionately greater increases in lung cancer mortality for women than for men and proportionately larger decreases in heart disease mortality among men (7,8).

The 2013 life table may be used to compare life expectancy at any age from birth onward. On the basis of mortality experienced in 2013, a person aged 65 could expect to live an average of 19.3 more years, for a total of 84.3 years; a person aged 85 could expect to live an additional 6.6 years, for a total of 91.6 years; and a person aged 100 could expect to live an additional 2.3 years, on average (Table A).

Life expectancy by race

Between 2012 and 2013, life expectancy remained unchanged at 75.5 years for the black population and declined by 0.1 year from 79.1 to 79.0 years for the white population (Table 19). The difference in life expectancy between the white and black populations was 3.5 years in 2013, a historically record low level. The white-black difference in life expectancy narrowed from 14.6 years in 1900 to 5.7 years in 1982, but it increased to 7.1 years in 1993 before beginning to decline again in 1994 (Table 19). The increase in the gap from 1983 to 1993 was largely the result of increases in mortality among the black male population due to HIV infection and homicide (8).

Among the four race-sex groups (Figure 1), white females continued to have the highest life expectancy at birth (81.4 years), followed by black females (78.4), white males (76.7), and black males (72.3). Between 2012 and 2013, life expectancy remained unchanged for black males (72.3) and black females (78.4). Black males experienced a decline in life expectancy every year for 1984–1989 (8), followed by annual increases in 1990–1992 and 1994–2012. Between 2012 and 2013, life expectancy remained unchanged for white males (76.7) and white females (81.4). Overall, gains in life expectancy between 1980 and 2013 were 8.5 years for black males, 6.0 years for white males, 5.9 years for black females, and 3.3 years for white females (Table 19).

Life expectancy by Hispanic origin

Between 2012 and 2013, life expectancy remained unchanged for the non-Hispanic black population (75.1) and the Hispanic population (81.9). It declined by 0.1 year for the non-Hispanic white population (from 78.9 to 78.8) (Table 19). In 2013, the Hispanic population had a life expectancy advantage at birth of 3.1 years over the non-Hispanic white population and 6.8 years over the non-Hispanic black population. The U.S. life tables by Hispanic origin are based on death rates that have been adjusted for race and ethnicity misclassification on death certificates (see Technical Notes for a detailed description of the methodology).

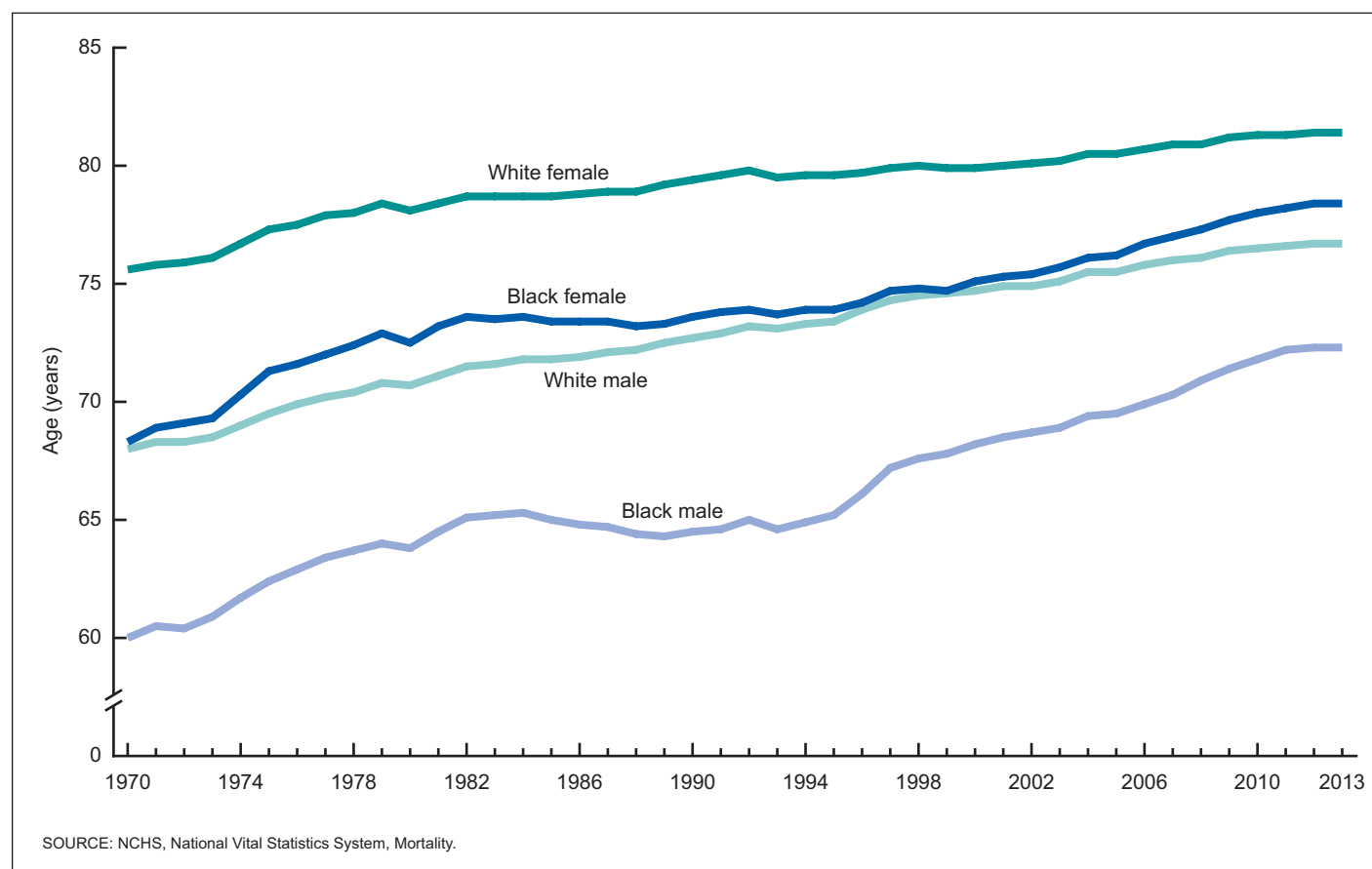


Figure 1. Life expectancy at birth, by race and sex: United States, 1970–2013

Among the six Hispanic-origin race-sex groups (Figure 2), Hispanic females continued to have the highest life expectancy at birth (84.2 years), followed by non-Hispanic white females (81.2), Hispanic males (79.2), non-Hispanic black females (78.1), non-Hispanic white males (76.5), and non-Hispanic black males (71.9). The smallest difference is between Hispanic males and non-Hispanic black females, with Hispanic males having an advantage of 1.1 years. The largest difference is between Hispanic females and non-Hispanic black males, with Hispanic females having a life expectancy at birth 12.3 years greater.

The Hispanic mortality advantage is also evident in the effect produced on life expectancy at birth when race and Hispanic origin are considered separately. Until 2006, U.S. life tables were produced only by race (white and black), irrespective of Hispanic origin. When the Hispanic population is excluded from the two race groups and only the non-Hispanic black and non-Hispanic white populations are included, life expectancy at birth declines. For example, for the black population, irrespective of Hispanic origin, life expectancy at birth was 75.5 years in 2013 but was 75.1 years when only the non-Hispanic segment of the black population was included. Similarly, life expectancy for the white population, irrespective of Hispanic origin, was 79.0 years in 2013, but was 78.8 years when only the non-Hispanic segment of the white population was included. The effect of the Hispanic mortality advantage on race-specific life expectancy was also observed for each race-sex group. (See [Technical Notes](#) for a detailed description of the methodology used to estimate the Hispanic-origin life tables.)

Survivorship in the United States

Table B summarizes the number of survivors out of 100,000 persons born alive (l_x) by age, race, Hispanic origin, and sex for 2013. Table 20 shows trends in survivorship from 1900 to 2013. In 2013, 99.4% of all infants born in the United States survived the first year of life. In contrast, 87.6% of infants born in 1900 survived the first year. Of the 2013 period life table cohort, 57.9% survived to age 80 and 2.0% survived to age 100. In 1900, 13.5% of the life table cohort survived to age 80 and 0.03% survived to age 100 (Table 20). The U.S. life tables by Hispanic origin are based on death rates that have been adjusted for race and ethnicity misclassification on death certificates (see [Technical Notes](#) for a detailed description of the methodology).

Survivorship by race

Among the four race-sex groups, white females have the highest median age at death, with about 52.7% surviving to age 84 (Tables 4–9). Of the original hypothetical cohort of 100,000 infant white females, 99.2% survive to age 20, 88.5% survive to age 65, and 49.2% survive to age 85 (Table 6). White males have slightly higher survival rates than black females at the younger ages, with 98.9% surviving to age 20 compared with 98.5% of black females (Tables 5 and 9). At the older ages, however, black female survival surpasses white male survival. By age 85, white male survival is 35.6% compared with 41.5% for black females. The median age at death for black males is close to 76 years, about 8 years less than

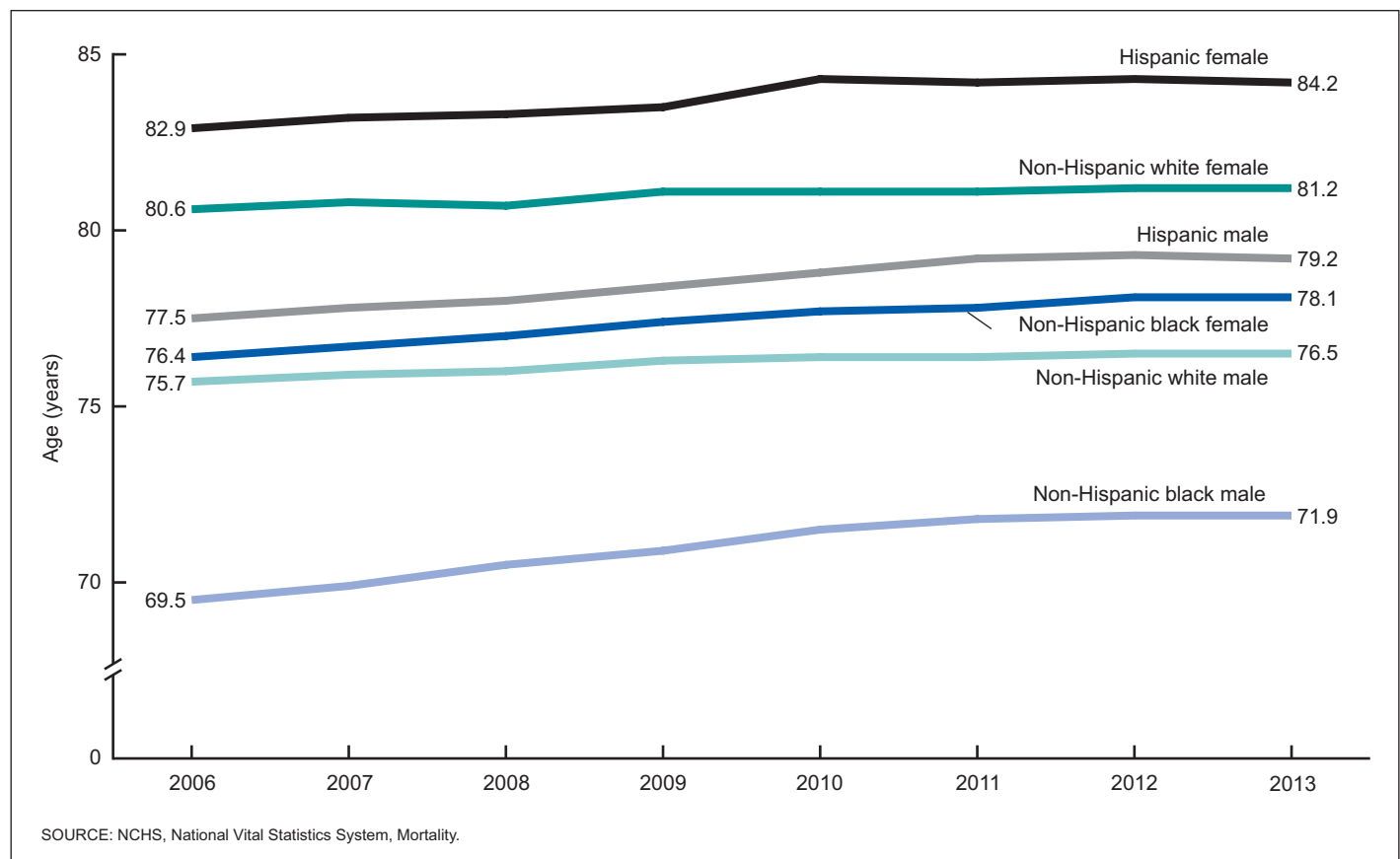


Figure 2. Life expectancy at birth, by Hispanic origin, race, and sex: United States, 2006–2013

Table B. Number of survivors out of 100,000 born alive, by race, Hispanic origin, age, and sex: United States, 2013

Age	All races and origins			White			Black			Hispanic ¹			Non-Hispanic white ¹			Non-Hispanic black ¹		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,404	99,349	99,463	99,494	99,441	99,549	98,878	98,797	98,961	99,500	99,464	99,538	99,495	99,438	99,555	98,889	98,803	98,977
5	99,303	99,235	99,374	99,401	99,337	99,468	98,731	98,636	98,829	99,418	99,375	99,465	99,401	99,323	99,483	98,728	98,642	98,837
10	99,244	99,170	99,322	99,348	99,277	99,422	98,647	98,545	98,752	99,373	99,327	99,425	99,345	99,254	99,441	98,636	98,552	98,755
15	99,174	99,090	99,262	99,279	99,200	99,363	98,561	98,444	98,683	99,311	99,262	99,365	99,278	99,170	99,391	98,543	98,451	98,682
20	98,953	98,784	99,132	99,069	98,916	99,231	98,258	97,984	98,542	99,139	99,030	99,257	99,062	98,881	99,253	98,214	97,952	98,528
25	98,542	98,189	98,913	98,672	98,351	99,013	97,701	97,136	98,283	98,831	98,594	99,095	98,651	98,297	99,024	97,611	97,036	98,246
30	98,062	97,518	98,633	98,207	97,707	98,738	97,019	96,141	97,904	98,483	98,100	98,915	98,155	97,610	98,725	96,897	96,003	97,842
35	97,500	96,770	98,262	97,660	96,984	98,376	96,215	95,028	97,389	98,093	97,575	98,676	97,564	96,828	98,330	96,053	94,844	97,292
40	96,811	95,906	97,749	96,988	96,148	97,875	95,219	93,742	96,658	97,615	96,941	98,363	96,839	95,932	97,782	94,985	93,463	96,511
45	95,848	94,734	96,997	96,047	95,001	97,147	93,878	92,111	95,582	96,946	96,083	97,894	95,837	94,715	97,000	93,576	91,750	95,380
50	94,352	92,925	95,816	94,587	93,231	96,005	91,848	89,692	93,913	95,855	94,722	97,090	94,314	92,885	95,792	91,466	89,232	93,645
55	92,062	90,136	94,023	92,344	90,483	94,276	88,771	86,064	91,343	94,152	92,582	95,838	92,010	90,080	93,997	88,295	85,494	90,997
60	88,788	86,094	91,508	89,170	86,559	91,857	84,167	80,416	87,696	91,650	89,382	94,025	88,774	86,101	91,512	83,586	79,749	87,239
65	84,343	80,668	88,030	84,858	81,308	88,491	77,927	72,719	82,761	88,036	84,823	91,307	84,419	80,825	88,091	77,230	71,960	82,173
70	78,308	73,656	82,965	78,882	74,386	83,469	70,296	63,708	76,374	83,135	78,704	87,503	78,415	73,909	83,018	69,458	62,813	75,639
75	69,764	64,050	75,460	70,341	64,799	75,961	60,454	52,561	67,684	76,101	70,140	81,780	69,852	64,341	75,457	59,531	51,608	66,839
80	57,879	51,252	64,427	58,373	51,912	64,851	48,330	39,574	56,278	65,892	58,728	72,547	57,872	51,465	64,320	47,412	38,678	55,393
85	42,192	35,214	48,940	42,493	35,637	49,207	34,036	25,717	41,512	51,524	43,361	58,749	42,045	35,254	48,721	33,260	25,009	40,690
90	24,208	18,213	29,723	24,283	18,408	29,769	19,509	13,086	25,190	33,327	25,401	39,727	23,985	18,166	29,432	18,993	12,656	24,566
95	9,299	5,973	12,212	9,161	5,887	12,040	8,374	4,671	11,366	15,489	10,036	19,312	9,036	5,798	11,891	8,132	4,503	11,092
100	1,971	1,023	2,754	1,862	945	2,619	2,411	1,033	3,349	4,356	2,229	5,553	1,837	931	2,587	2,343	997	3,309

¹Life tables by Hispanic origin are based on death rates that have been adjusted for race and ethnicity misclassification on death certificates. Updated classification ratios were applied; see Technical Notes.

SOURCE: NCHS, National Vital Statistics System, Mortality.

that for white females (Table 8). Among black males, 98.0% survive to age 20, 72.7% to age 65, and 25.7% to age 85. By age 100, there is very little difference between the white and black populations in terms of survival. Around 1% of white and black males and around 3% of white and black females survive to age 100.

Survivorship by Hispanic origin

In 2013, 99.5% of Hispanic and non-Hispanic white infants survived the first year of life, compared with 98.9% of non-Hispanic black infants (Tables 10–19). Of both the Hispanic and non-Hispanic white populations, 99.1% survived to age 20, while 98.2% of the non-Hispanic black population survived to age 20. By age 65, the Hispanic population has a clear survival advantage compared with the other two populations. Overall, 88.0% of the Hispanic population survived to age 65, compared with 84.4% of the non-Hispanic white and 77.2% of the non-Hispanic black populations. The Hispanic survival advantage increases with age so that by age 85, 51.5% of the Hispanic population has survived, compared with 42.0% of the non-Hispanic white and 33.3% of the non-Hispanic black populations.

Among the six Hispanic-origin race-sex groups, Hispanic females had the highest median age at death, with 47.9% surviving to age 88 (Figure 3). The group with the next highest median age at death is non-Hispanic white females, with 48.7% surviving to age 85. Hispanic males had 49.9% surviving to age 83; followed by non-Hispanic black females, with 49.8% surviving to age 82; non-Hispanic white males, with 48.4% surviving to age 81; and

finally non-Hispanic black males, with 49.2 % surviving to age 76 (see Technical Notes).

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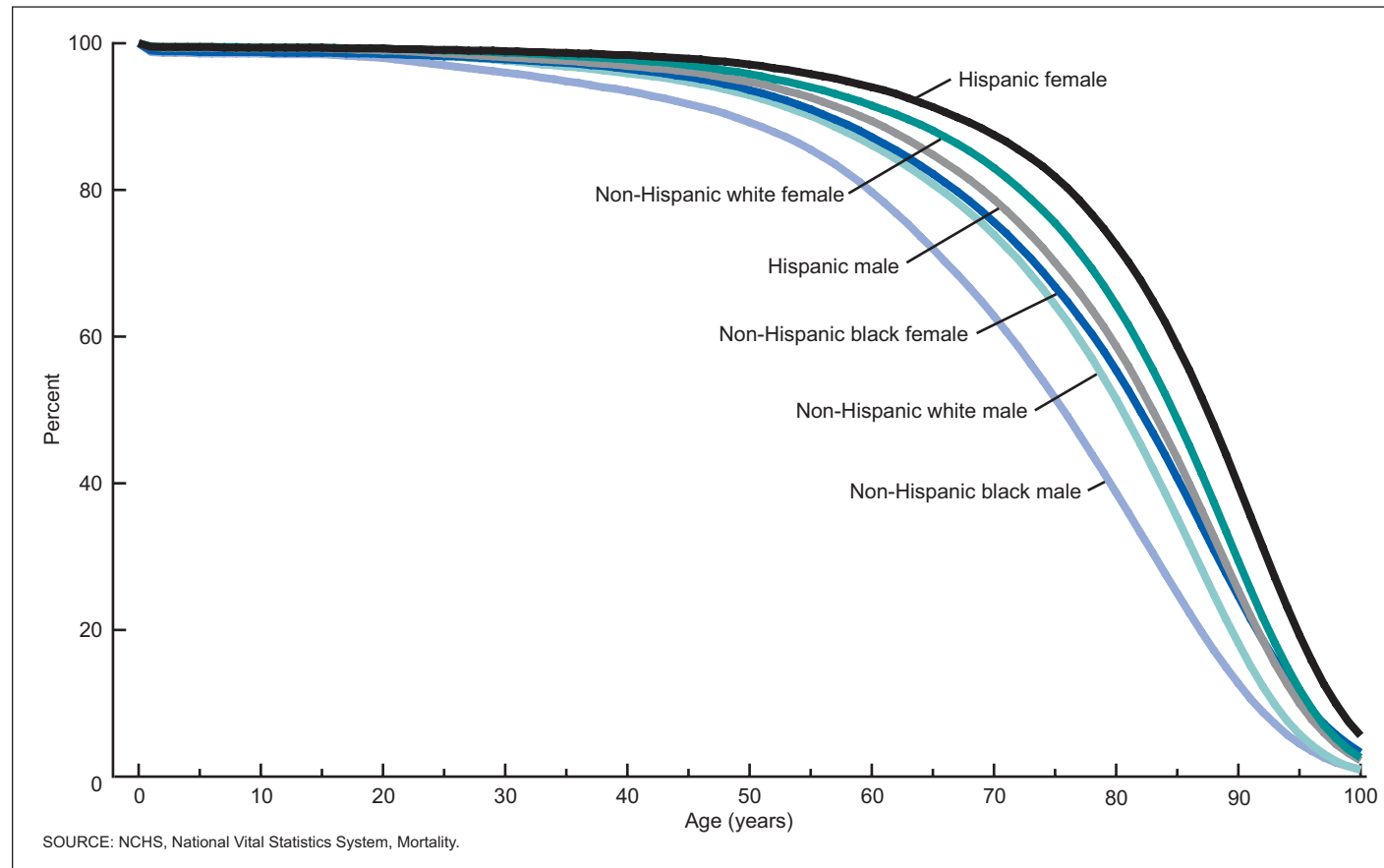


Figure 3. Percentage surviving, by Hispanic origin, race, age, and sex: United States, 2013

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Table 1. Life table for the total population: United States, 2013Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table01.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.005958	100,000	596	99,475	7,882,618	78.8
1-2	0.000422	99,404	42	99,383	7,783,144	78.3
2-3	0.000255	99,362	25	99,350	7,683,761	77.3
3-4	0.000186	99,337	19	99,328	7,584,411	76.4
4-5	0.000159	99,318	16	99,311	7,485,083	75.4
5-6	0.000145	99,303	14	99,296	7,385,773	74.4
6-7	0.000129	99,288	13	99,282	7,286,477	73.4
7-8	0.000116	99,275	12	99,270	7,187,195	72.4
8-9	0.000104	99,264	10	99,259	7,087,926	71.4
9-10	0.000095	99,254	9	99,249	6,988,667	70.4
10-11	0.000091	99,244	9	99,240	6,889,418	69.4
11-12	0.000098	99,235	10	99,230	6,790,178	68.4
12-13	0.000122	99,225	12	99,219	6,690,948	67.4
13-14	0.000166	99,213	17	99,205	6,591,729	66.4
14-15	0.000227	99,197	23	99,185	6,492,524	65.5
15-16	0.000292	99,174	29	99,160	6,393,338	64.5
16-17	0.000359	99,145	36	99,128	6,294,179	63.5
17-18	0.000437	99,110	43	99,088	6,195,051	62.5
18-19	0.000525	99,066	52	99,040	6,095,963	61.5
19-20	0.000616	99,014	61	98,984	5,996,923	60.6
20-21	0.000709	98,953	70	98,918	5,897,939	59.6
21-22	0.000793	98,883	78	98,844	5,799,021	58.6
22-23	0.000856	98,805	85	98,762	5,700,177	57.7
23-24	0.000894	98,720	88	98,676	5,601,414	56.7
24-25	0.000913	98,632	90	98,587	5,502,738	55.8
25-26	0.000928	98,542	91	98,496	5,404,151	54.8
26-27	0.000947	98,450	93	98,404	5,305,655	53.9
27-28	0.000970	98,357	95	98,310	5,207,251	52.9
28-29	0.001000	98,262	98	98,213	5,108,942	52.0
29-30	0.001035	98,164	102	98,113	5,010,729	51.0
30-31	0.001073	98,062	105	98,009	4,912,616	50.1
31-32	0.001112	97,957	109	97,902	4,814,607	49.2
32-33	0.001149	97,848	112	97,792	4,716,704	48.2
33-34	0.001184	97,735	116	97,678	4,618,913	47.3
34-35	0.001221	97,620	119	97,560	4,521,235	46.3
35-36	0.001269	97,500	124	97,439	4,423,675	45.4
36-37	0.001331	97,377	130	97,312	4,326,236	44.4
37-38	0.001407	97,247	137	97,179	4,228,924	43.5
38-39	0.001494	97,110	145	97,038	4,131,746	42.5
39-40	0.001591	96,965	154	96,888	4,034,708	41.6
40-41	0.001700	96,811	165	96,729	3,937,820	40.7
41-42	0.001826	96,646	176	96,558	3,841,091	39.7
42-43	0.001971	96,470	190	96,375	3,744,533	38.8
43-44	0.002144	96,280	206	96,176	3,648,158	37.9
44-45	0.002348	96,073	226	95,961	3,551,982	37.0
45-46	0.002570	95,848	246	95,725	3,456,021	36.1
46-47	0.002815	95,601	269	95,467	3,360,297	35.1
47-48	0.003103	95,332	296	95,184	3,264,830	34.2
48-49	0.003431	95,036	326	94,873	3,169,645	33.4
49-50	0.003782	94,710	358	94,531	3,074,772	32.5
50-51	0.004138	94,352	390	94,157	2,980,241	31.6
51-52	0.004496	93,962	422	93,751	2,886,084	30.7
52-53	0.004873	93,539	456	93,311	2,792,333	29.9
53-54	0.005281	93,084	492	92,838	2,699,022	29.0
54-55	0.005723	92,592	530	92,327	2,606,184	28.1
55-56	0.006200	92,062	571	91,777	2,513,857	27.3
56-57	0.006695	91,491	612	91,185	2,422,080	26.5
57-58	0.007203	90,879	655	90,551	2,330,895	25.6
58-59	0.007722	90,224	697	89,876	2,240,344	24.8
59-60	0.008260	89,527	739	89,158	2,150,468	24.0
60-61	0.008842	88,788	785	88,395	2,061,310	23.2

See footnote at end of table.

Table 1. Life table for the total population: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table01.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
61–62	0.009481	88,003	834	87,586	1,972,915	22.4
62–63	0.010169	87,169	886	86,725	1,885,329	21.6
63–64	0.010905	86,282	941	85,812	1,798,604	20.8
64–65	0.011695	85,341	998	84,842	1,712,792	20.1
65–66	0.012556	84,343	1,059	83,814	1,627,949	19.3
66–67	0.013508	83,284	1,125	82,722	1,544,136	18.5
67–68	0.014581	82,159	1,198	81,560	1,461,414	17.8
68–69	0.015815	80,961	1,280	80,321	1,379,854	17.0
69–70	0.017230	79,681	1,373	78,994	1,299,533	16.3
70–71	0.018838	78,308	1,475	77,570	1,220,538	15.6
71–72	0.020667	76,833	1,588	76,039	1,142,968	14.9
72–73	0.022677	75,245	1,706	74,392	1,066,929	14.2
73–74	0.024820	73,539	1,825	72,626	992,538	13.5
74–75	0.027179	71,713	1,949	70,739	919,912	12.8
75–76	0.029681	69,764	2,071	68,729	849,173	12.2
76–77	0.032686	67,694	2,213	66,587	780,444	11.5
77–78	0.036220	65,481	2,372	64,295	713,857	10.9
78–79	0.040148	63,109	2,534	61,842	649,562	10.3
79–80	0.044507	60,575	2,696	59,227	587,719	9.7
80–81	0.049302	57,879	2,854	56,453	528,492	9.1
81–82	0.054486	55,026	2,998	53,527	472,039	8.6
82–83	0.060393	52,028	3,142	50,457	418,512	8.0
83–84	0.067070	48,886	3,279	47,246	368,056	7.5
84–85	0.074866	45,607	3,414	43,900	320,810	7.0
85–86	0.083543	42,192	3,525	40,430	276,910	6.6
86–87	0.093322	38,668	3,609	36,863	236,480	6.1
87–88	0.104041	35,059	3,648	33,235	199,617	5.7
88–89	0.115743	31,411	3,636	29,594	166,381	5.3
89–90	0.128461	27,776	3,568	25,992	136,788	4.9
90–91	0.142215	24,208	3,443	22,486	110,796	4.6
91–92	0.157012	20,765	3,260	19,135	88,310	4.3
92–93	0.172842	17,505	3,026	15,992	69,175	4.0
93–94	0.189673	14,479	2,746	13,106	53,183	3.7
94–95	0.207455	11,733	2,434	10,516	40,077	3.4
95–96	0.226114	9,299	2,103	8,247	29,561	3.2
96–97	0.245553	7,196	1,767	6,313	21,314	3.0
97–98	0.265656	5,429	1,442	4,708	15,001	2.8
98–99	0.286286	3,987	1,141	3,416	10,293	2.6
99–100	0.307291	2,845	874	2,408	6,877	2.4
100 and over	1.000000	1,971	1,971	4,469	4,469	2.3

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 2. Life table for males: United States, 2013Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table02.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.006514	100,000	651	99,427	7,641,771	76.4
1-2	0.000463	99,349	46	99,326	7,542,343	75.9
2-3	0.000289	99,303	29	99,288	7,443,018	75.0
3-4	0.000209	99,274	21	99,263	7,343,729	74.0
4-5	0.000180	99,253	18	99,244	7,244,466	73.0
5-6	0.000165	99,235	16	99,227	7,145,222	72.0
6-7	0.000148	99,219	15	99,211	7,045,995	71.0
7-8	0.000132	99,204	13	99,198	6,946,783	70.0
8-9	0.000115	99,191	11	99,185	6,847,586	69.0
9-10	0.000099	99,180	10	99,175	6,748,400	68.0
10-11	0.000090	99,170	9	99,165	6,649,226	67.0
11-12	0.000097	99,161	10	99,156	6,550,060	66.1
12-13	0.000130	99,151	13	99,145	6,450,904	65.1
13-14	0.000196	99,139	19	99,129	6,351,759	64.1
14-15	0.000289	99,119	29	99,105	6,252,630	63.1
15-16	0.000386	99,090	38	99,071	6,153,526	62.1
16-17	0.000486	99,052	48	99,028	6,054,454	61.1
17-18	0.000605	99,004	60	98,974	5,955,426	60.2
18-19	0.000740	98,944	73	98,907	5,856,452	59.2
19-20	0.000880	98,871	87	98,827	5,757,545	58.2
20-21	0.001024	98,784	101	98,733	5,658,717	57.3
21-22	0.001152	98,683	114	98,626	5,559,984	56.3
22-23	0.001245	98,569	123	98,508	5,461,358	55.4
23-24	0.001296	98,446	128	98,382	5,362,851	54.5
24-25	0.001316	98,319	129	98,254	5,264,468	53.5
25-26	0.001326	98,189	130	98,124	5,166,214	52.6
26-27	0.001342	98,059	132	97,993	5,068,090	51.7
27-28	0.001362	97,927	133	97,861	4,970,097	50.8
28-29	0.001392	97,794	136	97,726	4,872,236	49.8
29-30	0.001429	97,658	140	97,588	4,774,510	48.9
30-31	0.001470	97,518	143	97,447	4,676,922	48.0
31-32	0.001509	97,375	147	97,302	4,579,476	47.0
32-33	0.001543	97,228	150	97,153	4,482,174	46.1
33-34	0.001571	97,078	153	97,002	4,385,021	45.2
34-35	0.001601	96,926	155	96,848	4,288,019	44.2
35-36	0.001640	96,770	159	96,691	4,191,171	43.3
36-37	0.001698	96,612	164	96,530	4,094,480	42.4
37-38	0.001774	96,448	171	96,362	3,997,951	41.5
38-39	0.001868	96,276	180	96,187	3,901,589	40.5
39-40	0.001978	96,097	190	96,002	3,805,402	39.6
40-41	0.002105	95,906	202	95,806	3,709,401	38.7
41-42	0.002253	95,705	216	95,597	3,613,595	37.8
42-43	0.002425	95,489	232	95,373	3,517,998	36.8
43-44	0.002631	95,257	251	95,132	3,422,625	35.9
44-45	0.002875	95,007	273	94,870	3,327,493	35.0
45-46	0.003143	94,734	298	94,585	3,232,623	34.1
46-47	0.003443	94,436	325	94,273	3,138,038	33.2
47-48	0.003798	94,111	357	93,932	3,043,765	32.3
48-49	0.004205	93,753	394	93,556	2,949,833	31.5
49-50	0.004645	93,359	434	93,142	2,856,277	30.6
50-51	0.005090	92,925	473	92,689	2,763,135	29.7
51-52	0.005541	92,452	512	92,196	2,670,446	28.9
52-53	0.006026	91,940	554	91,663	2,578,250	28.0
53-54	0.006565	91,386	600	91,086	2,486,587	27.2
54-55	0.007158	90,786	650	90,461	2,395,501	26.4
55-56	0.007794	90,136	703	89,785	2,305,040	25.6
56-57	0.008451	89,434	756	89,056	2,215,255	24.8
57-58	0.009124	88,678	809	88,273	2,126,199	24.0
58-59	0.009803	87,869	861	87,438	2,037,926	23.2
59-60	0.010500	87,007	914	86,551	1,950,488	22.4
60-61	0.011256	86,094	969	85,609	1,863,937	21.7

See footnote at end of table.

Table 2. Life table for males: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table02.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
61–62	0.012076	85,125	1,028	84,611	1,778,328	20.9
62–63	0.012921	84,097	1,087	83,553	1,693,717	20.1
63–64	0.013773	83,010	1,143	82,439	1,610,164	19.4
64–65	0.014646	81,867	1,199	81,267	1,527,725	18.7
65–66	0.015569	80,668	1,256	80,040	1,446,458	17.9
66–67	0.016603	79,412	1,318	78,753	1,366,418	17.2
67–68	0.017800	78,094	1,390	77,399	1,287,665	16.5
68–69	0.019228	76,704	1,475	75,966	1,210,266	15.8
69–70	0.020906	75,229	1,573	74,442	1,134,300	15.1
70–71	0.022826	73,656	1,681	72,815	1,059,858	14.4
71–72	0.024998	71,975	1,799	71,075	987,043	13.7
72–73	0.027356	70,175	1,920	69,216	915,968	13.1
73–74	0.029913	68,256	2,042	67,235	846,752	12.4
74–75	0.032679	66,214	2,164	65,132	779,517	11.8
75–76	0.035524	64,050	2,275	62,912	714,385	11.2
76–77	0.039010	61,775	2,410	60,570	651,473	10.5
77–78	0.043116	59,365	2,560	58,085	590,903	10.0
78–79	0.047647	56,805	2,707	55,452	532,818	9.4
79–80	0.052626	54,099	2,847	52,675	477,366	8.8
80–81	0.058301	51,252	2,988	49,758	424,691	8.3
81–82	0.064637	48,264	3,120	46,704	374,933	7.8
82–83	0.071412	45,144	3,224	43,532	328,229	7.3
83–84	0.079031	41,920	3,313	40,264	284,697	6.8
84–85	0.087905	38,607	3,394	36,910	244,433	6.3
85–86	0.098958	35,214	3,485	33,471	207,523	5.9
86–87	0.110149	31,729	3,495	29,981	174,052	5.5
87–88	0.122333	28,234	3,454	26,507	144,070	5.1
88–89	0.135536	24,780	3,359	23,101	117,563	4.7
89–90	0.149773	21,421	3,208	19,817	94,462	4.4
90–91	0.165040	18,213	3,006	16,710	74,645	4.1
91–92	0.181318	15,207	2,757	13,829	57,935	3.8
92–93	0.198565	12,450	2,472	11,214	44,107	3.5
93–94	0.216721	9,978	2,162	8,897	32,893	3.3
94–95	0.235701	7,815	1,842	6,894	23,996	3.1
95–96	0.255399	5,973	1,526	5,210	17,102	2.9
96–97	0.275691	4,448	1,226	3,835	11,891	2.7
97–98	0.296433	3,222	955	2,744	8,057	2.5
98–99	0.317468	2,267	720	1,907	5,313	2.3
99–100	0.338631	1,547	524	1,285	3,406	2.2
100 and over	1.000000	1,023	1,023	2,121	2,121	2.1

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 3. Life table for females: United States, 2013Spreadsheet version available from: http://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table03.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.005374	100,000	537	99,524	8,117,726	81.2
1-2	0.000379	99,463	38	99,444	8,018,202	80.6
2-3	0.000219	99,425	22	99,414	7,918,758	79.6
3-4	0.000162	99,403	16	99,395	7,819,344	78.7
4-5	0.000136	99,387	14	99,380	7,719,949	77.7
5-6	0.000124	99,374	12	99,367	7,620,569	76.7
6-7	0.000110	99,361	11	99,356	7,521,201	75.7
7-8	0.000100	99,350	10	99,345	7,421,846	74.7
8-9	0.000094	99,340	9	99,336	7,322,500	73.7
9-10	0.000091	99,331	9	99,326	7,223,165	72.7
10-11	0.000093	99,322	9	99,317	7,123,838	71.7
11-12	0.000100	99,313	10	99,308	7,024,521	70.7
12-13	0.000114	99,303	11	99,297	6,925,213	69.7
13-14	0.000135	99,292	13	99,285	6,825,916	68.7
14-15	0.000162	99,278	16	99,270	6,726,631	67.8
15-16	0.000193	99,262	19	99,252	6,627,361	66.8
16-17	0.000225	99,243	22	99,232	6,528,109	65.8
17-18	0.000261	99,221	26	99,208	6,428,877	64.8
18-19	0.000299	99,195	30	99,180	6,329,669	63.8
19-20	0.000338	99,165	33	99,148	6,230,489	62.8
20-21	0.000377	99,132	37	99,113	6,131,341	61.9
21-22	0.000415	99,094	41	99,074	6,032,228	60.9
22-23	0.000447	99,053	44	99,031	5,933,154	59.9
23-24	0.000471	99,009	47	98,985	5,834,123	58.9
24-25	0.000492	98,962	49	98,938	5,735,138	58.0
25-26	0.000513	98,913	51	98,888	5,636,200	57.0
26-27	0.000537	98,863	53	98,836	5,537,312	56.0
27-28	0.000564	98,810	56	98,782	5,438,476	55.0
28-29	0.000596	98,754	59	98,724	5,339,694	54.1
29-30	0.000631	98,695	62	98,664	5,240,970	53.1
30-31	0.000670	98,633	66	98,600	5,142,306	52.1
31-32	0.000711	98,567	70	98,532	5,043,706	51.2
32-33	0.000752	98,497	74	98,460	4,945,175	50.2
33-34	0.000794	98,423	78	98,383	4,846,715	49.2
34-35	0.000841	98,344	83	98,303	4,748,332	48.3
35-36	0.000897	98,262	88	98,218	4,650,029	47.3
36-37	0.000965	98,174	95	98,126	4,551,811	46.4
37-38	0.001041	98,079	102	98,028	4,453,685	45.4
38-39	0.001122	97,977	110	97,922	4,355,657	44.5
39-40	0.001207	97,867	118	97,808	4,257,735	43.5
40-41	0.001299	97,749	127	97,685	4,159,927	42.6
41-42	0.001403	97,622	137	97,553	4,062,242	41.6
42-43	0.001523	97,485	148	97,411	3,964,689	40.7
43-44	0.001663	97,336	162	97,255	3,867,278	39.7
44-45	0.001827	97,174	178	97,086	3,770,023	38.8
45-46	0.002004	96,997	194	96,900	3,672,937	37.9
46-47	0.002197	96,802	213	96,696	3,576,038	36.9
47-48	0.002421	96,590	234	96,473	3,479,342	36.0
48-49	0.002674	96,356	258	96,227	3,382,869	35.1
49-50	0.002941	96,098	283	95,957	3,286,642	34.2
50-51	0.003212	95,816	308	95,662	3,190,685	33.3
51-52	0.003484	95,508	333	95,341	3,095,023	32.4
52-53	0.003760	95,175	358	94,996	2,999,682	31.5
53-54	0.004046	94,817	384	94,625	2,904,686	30.6
54-55	0.004351	94,434	411	94,228	2,810,060	29.8
55-56	0.004680	94,023	440	93,803	2,715,832	28.9
56-57	0.005028	93,583	471	93,347	2,622,029	28.0
57-58	0.005391	93,112	502	92,861	2,528,682	27.2
58-59	0.005766	92,610	534	92,343	2,435,821	26.3
59-60	0.006166	92,076	568	91,792	2,343,477	25.5
60-61	0.006598	91,508	604	91,207	2,251,685	24.6

See footnote at end of table.

Table 3. Life table for females: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table03.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
61–62	0.007083	90,905	644	90,583	2,160,479	23.8
62–63	0.007638	90,261	689	89,916	2,069,896	22.9
63–64	0.008279	89,571	742	89,201	1,979,980	22.1
64–65	0.009003	88,830	800	88,430	1,890,779	21.3
65–66	0.009813	88,030	864	87,598	1,802,349	20.5
66–67	0.010703	87,166	933	86,700	1,714,751	19.7
67–68	0.011675	86,233	1,007	85,730	1,628,051	18.9
68–69	0.012753	85,227	1,087	84,683	1,542,321	18.1
69–70	0.013958	84,140	1,174	83,552	1,457,638	17.3
70–71	0.015325	82,965	1,271	82,329	1,374,086	16.6
71–72	0.016892	81,694	1,380	81,004	1,291,756	15.8
72–73	0.018650	80,314	1,498	79,565	1,210,752	15.1
73–74	0.020487	78,816	1,615	78,009	1,131,188	14.4
74–75	0.022554	77,201	1,741	76,331	1,053,179	13.6
75–76	0.024831	75,460	1,874	74,523	976,848	12.9
76–77	0.027514	73,586	2,025	72,574	902,325	12.3
77–78	0.030684	71,562	2,196	70,464	829,751	11.6
78–79	0.034250	69,366	2,376	68,178	759,288	10.9
79–80	0.038265	66,990	2,563	65,708	691,110	10.3
80–81	0.042554	64,427	2,742	63,056	625,401	9.7
81–82	0.047066	61,685	2,903	60,233	562,346	9.1
82–83	0.052561	58,782	3,090	57,237	502,112	8.5
83–84	0.058864	55,692	3,278	54,053	444,875	8.0
84–85	0.066285	52,414	3,474	50,677	390,822	7.5
85–86	0.074167	48,940	3,630	47,125	340,145	7.0
86–87	0.083469	45,310	3,782	43,419	293,021	6.5
87–88	0.093753	41,528	3,893	39,581	249,602	6.0
88–89	0.105076	37,635	3,955	35,657	210,021	5.6
89–90	0.117487	33,680	3,957	31,702	174,363	5.2
90–91	0.131021	29,723	3,894	27,776	142,662	4.8
91–92	0.145700	25,829	3,763	23,947	114,886	4.4
92–93	0.161528	22,066	3,564	20,283	90,939	4.1
93–94	0.178486	18,501	3,302	16,850	70,655	3.8
94–95	0.196532	15,199	2,987	13,706	53,805	3.5
95–96	0.215597	12,212	2,633	10,896	40,099	3.3
96–97	0.235585	9,579	2,257	8,451	29,204	3.0
97–98	0.256372	7,322	1,877	6,384	20,753	2.8
98–99	0.277812	5,445	1,513	4,689	14,369	2.6
99–100	0.299734	3,932	1,179	3,343	9,681	2.5
100 and over	1.000000	2,754	2,754	6,337	6,337	2.3

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 4. Life table for the white population: United States, 2013Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table04.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.005063	100,000	506	99,552	7,904,870	79.0
1-2	0.000378	99,494	38	99,475	7,805,318	78.5
2-3	0.000235	99,456	23	99,444	7,705,843	77.5
3-4	0.000175	99,433	17	99,424	7,606,399	76.5
4-5	0.000143	99,415	14	99,408	7,506,975	75.5
5-6	0.000132	99,401	13	99,395	7,407,566	74.5
6-7	0.000117	99,388	12	99,382	7,308,172	73.5
7-8	0.000105	99,376	10	99,371	7,208,789	72.5
8-9	0.000096	99,366	10	99,361	7,109,418	71.5
9-10	0.000089	99,356	9	99,352	7,010,057	70.6
10-11	0.000088	99,348	9	99,343	6,910,705	69.6
11-12	0.000097	99,339	10	99,334	6,811,362	68.6
12-13	0.000121	99,329	12	99,323	6,712,028	67.6
13-14	0.000163	99,317	16	99,309	6,612,705	66.6
14-15	0.000219	99,301	22	99,290	6,513,396	65.6
15-16	0.000279	99,279	28	99,265	6,414,106	64.6
16-17	0.000341	99,252	34	99,235	6,314,840	63.6
17-18	0.000415	99,218	41	99,197	6,215,606	62.6
18-19	0.000499	99,177	49	99,152	6,116,409	61.7
19-20	0.000587	99,127	58	99,098	6,017,257	60.7
20-21	0.000679	99,069	67	99,035	5,918,159	59.7
21-22	0.000762	99,002	75	98,964	5,819,124	58.8
22-23	0.000825	98,926	82	98,885	5,720,160	57.8
23-24	0.000862	98,845	85	98,802	5,621,275	56.9
24-25	0.000882	98,759	87	98,716	5,522,473	55.9
25-26	0.000896	98,672	88	98,628	5,423,757	55.0
26-27	0.000915	98,584	90	98,539	5,325,129	54.0
27-28	0.000938	98,494	92	98,447	5,226,590	53.1
28-29	0.000968	98,401	95	98,354	5,128,143	52.1
29-30	0.001004	98,306	99	98,257	5,029,789	51.2
30-31	0.001043	98,207	102	98,156	4,931,533	50.2
31-32	0.001083	98,105	106	98,052	4,833,377	49.3
32-33	0.001119	97,999	110	97,944	4,735,325	48.3
33-34	0.001153	97,889	113	97,832	4,637,381	47.4
34-35	0.001188	97,776	116	97,718	4,539,549	46.4
35-36	0.001233	97,660	120	97,600	4,441,831	45.5
36-37	0.001294	97,539	126	97,476	4,344,231	44.5
37-38	0.001368	97,413	133	97,347	4,246,755	43.6
38-39	0.001453	97,280	141	97,209	4,149,408	42.7
39-40	0.001549	97,139	150	97,063	4,052,199	41.7
40-41	0.001658	96,988	161	96,908	3,955,136	40.8
41-42	0.001782	96,827	173	96,741	3,858,228	39.8
42-43	0.001924	96,655	186	96,562	3,761,487	38.9
43-44	0.002092	96,469	202	96,368	3,664,925	38.0
44-45	0.002288	96,267	220	96,157	3,568,558	37.1
45-46	0.002500	96,047	240	95,927	3,472,401	36.2
46-47	0.002736	95,807	262	95,676	3,376,474	35.2
47-48	0.003017	95,544	288	95,400	3,280,799	34.3
48-49	0.003343	95,256	318	95,097	3,185,398	33.4
49-50	0.003694	94,938	351	94,762	3,090,301	32.6
50-51	0.004049	94,587	383	94,395	2,995,539	31.7
51-52	0.004403	94,204	415	93,997	2,901,144	30.8
52-53	0.004767	93,789	447	93,566	2,807,147	29.9
53-54	0.005153	93,342	481	93,102	2,713,581	29.1
54-55	0.005567	92,861	517	92,603	2,620,480	28.2
55-56	0.006013	92,344	555	92,067	2,527,877	27.4
56-57	0.006481	91,789	595	91,491	2,435,810	26.5
57-58	0.006960	91,194	635	90,877	2,344,319	25.7
58-59	0.007448	90,559	675	90,222	2,253,442	24.9
59-60	0.007957	89,885	715	89,527	2,163,220	24.1

See footnote at end of table.

Table 4. Life table for the white population: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table04.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
60–61	0.008505	89,170	758	88,790	2,073,693	23.3
61–62	0.009113	88,411	806	88,008	1,984,903	22.5
62–63	0.009789	87,606	858	87,177	1,896,894	21.7
63–64	0.010541	86,748	914	86,291	1,809,717	20.9
64–65	0.011367	85,834	976	85,346	1,723,427	20.1
65–66	0.012270	84,858	1,041	84,337	1,638,081	19.3
66–67	0.013261	83,817	1,111	83,261	1,553,744	18.5
67–68	0.014357	82,705	1,187	82,112	1,470,483	17.8
68–69	0.015596	81,518	1,271	80,882	1,388,371	17.0
69–70	0.017009	80,247	1,365	79,564	1,307,489	16.3
70–71	0.018621	78,882	1,469	78,147	1,227,925	15.6
71–72	0.020467	77,413	1,584	76,621	1,149,778	14.9
72–73	0.022499	75,828	1,706	74,975	1,073,157	14.2
73–74	0.024655	74,122	1,827	73,208	998,182	13.5
74–75	0.027026	72,295	1,954	71,318	924,974	12.8
75–76	0.029548	70,341	2,078	69,302	853,656	12.1
76–77	0.032570	68,263	2,223	67,151	784,354	11.5
77–78	0.036158	66,039	2,388	64,845	717,203	10.9
78–79	0.040164	63,651	2,556	62,373	652,358	10.2
79–80	0.044551	61,095	2,722	59,734	589,985	9.7
80–81	0.049360	58,373	2,881	56,932	530,251	9.1
81–82	0.054632	55,492	3,032	53,976	473,318	8.5
82–83	0.060657	52,460	3,182	50,869	419,343	8.0
83–84	0.067409	49,278	3,322	47,617	368,474	7.5
84–85	0.075369	45,956	3,464	44,224	320,856	7.0
85–86	0.083638	42,493	3,554	40,716	276,632	6.5
86–87	0.093672	38,939	3,647	37,115	235,917	6.1
87–88	0.104693	35,291	3,695	33,444	198,802	5.6
88–89	0.116747	31,596	3,689	29,752	165,358	5.2
89–90	0.129868	27,908	3,624	26,095	135,606	4.9
90–91	0.144077	24,283	3,499	22,534	109,511	4.5
91–92	0.159379	20,785	3,313	19,128	86,977	4.2
92–93	0.175760	17,472	3,071	15,937	67,848	3.9
93–94	0.193184	14,401	2,782	13,010	51,912	3.6
94–95	0.211590	11,619	2,458	10,390	38,902	3.3
95–96	0.230895	9,161	2,115	8,103	28,512	3.1
96–97	0.250989	7,045	1,768	6,161	20,409	2.9
97–98	0.271742	5,277	1,434	4,560	14,248	2.7
98–99	0.293001	3,843	1,126	3,280	9,687	2.5
99–100	0.314599	2,717	855	2,290	6,407	2.4
100 and over	1.000000	1,862	1,862	4,118	4,118	2.2

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 5. Life table for white males: United States, 2013Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table05.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.005585	100,000	559	99,509	7,671,407	76.7
1-2	0.000409	99,441	41	99,421	7,571,898	76.1
2-3	0.000271	99,401	27	99,387	7,472,477	75.2
3-4	0.000200	99,374	20	99,364	7,373,090	74.2
4-5	0.000169	99,354	17	99,346	7,273,726	73.2
5-6	0.000153	99,337	15	99,330	7,174,380	72.2
6-7	0.000135	99,322	13	99,315	7,075,050	71.2
7-8	0.000120	99,309	12	99,303	6,975,735	70.2
8-9	0.000106	99,297	11	99,291	6,876,433	69.3
9-10	0.000094	99,286	9	99,281	6,777,141	68.3
10-11	0.000089	99,277	9	99,272	6,677,860	67.3
11-12	0.000098	99,268	10	99,263	6,578,587	66.3
12-13	0.000130	99,258	13	99,252	6,479,324	65.3
13-14	0.000189	99,245	19	99,236	6,380,072	64.3
14-15	0.000271	99,227	27	99,213	6,280,836	63.3
15-16	0.000357	99,200	35	99,182	6,181,623	62.3
16-17	0.000447	99,164	44	99,142	6,082,441	61.3
17-18	0.000556	99,120	55	99,092	5,983,299	60.4
18-19	0.000685	99,065	68	99,031	5,884,207	59.4
19-20	0.000822	98,997	81	98,956	5,785,176	58.4
20-21	0.000963	98,916	95	98,868	5,686,220	57.5
21-22	0.001090	98,820	108	98,766	5,587,352	56.5
22-23	0.001183	98,713	117	98,654	5,488,586	55.6
23-24	0.001234	98,596	122	98,535	5,389,931	54.7
24-25	0.001255	98,474	124	98,412	5,291,396	53.7
25-26	0.001266	98,351	125	98,288	5,192,984	52.8
26-27	0.001283	98,226	126	98,163	5,094,696	51.9
27-28	0.001304	98,100	128	98,036	4,996,533	50.9
28-29	0.001335	97,972	131	97,907	4,898,496	50.0
29-30	0.001373	97,841	134	97,774	4,800,590	49.1
30-31	0.001416	97,707	138	97,638	4,702,816	48.1
31-32	0.001456	97,569	142	97,498	4,605,178	47.2
32-33	0.001490	97,427	145	97,354	4,507,680	46.3
33-34	0.001517	97,281	148	97,208	4,410,326	45.3
34-35	0.001544	97,134	150	97,059	4,313,118	44.4
35-36	0.001581	96,984	153	96,907	4,216,059	43.5
36-37	0.001636	96,831	158	96,751	4,119,152	42.5
37-38	0.001711	96,672	165	96,589	4,022,401	41.6
38-39	0.001806	96,507	174	96,420	3,925,811	40.7
39-40	0.001918	96,332	185	96,240	3,829,392	39.8
40-41	0.002048	96,148	197	96,049	3,733,151	38.8
41-42	0.002197	95,951	211	95,845	3,637,102	37.9
42-43	0.002369	95,740	227	95,627	3,541,257	37.0
43-44	0.002569	95,513	245	95,391	3,445,630	36.1
44-45	0.002804	95,268	267	95,134	3,350,240	35.2
45-46	0.003059	95,001	291	94,855	3,255,105	34.3
46-47	0.003347	94,710	317	94,552	3,160,250	33.4
47-48	0.003696	94,393	349	94,219	3,065,698	32.5
48-49	0.004107	94,044	386	93,851	2,971,480	31.6
49-50	0.004555	93,658	427	93,445	2,877,629	30.7
50-51	0.005008	93,231	467	92,998	2,784,184	29.9
51-52	0.005460	92,765	507	92,511	2,691,186	29.0
52-53	0.005933	92,258	547	91,984	2,598,675	28.2
53-54	0.006441	91,711	591	91,415	2,506,690	27.3
54-55	0.006989	91,120	637	90,801	2,415,275	26.5
55-56	0.007578	90,483	686	90,140	2,324,474	25.7
56-57	0.008190	89,797	735	89,430	2,234,334	24.9
57-58	0.008816	89,062	785	88,669	2,144,904	24.1
58-59	0.009449	88,277	834	87,860	2,056,235	23.3
59-60	0.010102	87,443	883	87,001	1,968,375	22.5
60-61	0.010805	86,559	935	86,092	1,881,374	21.7

See footnote at end of table.

Table 5. Life table for white males: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table05.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
61–62	0.011575	85,624	991	85,129	1,795,282	21.0
62–63	0.012393	84,633	1,049	84,109	1,710,154	20.2
63–64	0.013253	83,584	1,108	83,030	1,626,045	19.5
64–65	0.014163	82,476	1,168	81,892	1,543,015	18.7
65–66	0.015134	81,308	1,230	80,693	1,461,122	18.0
66–67	0.016214	80,078	1,298	79,429	1,380,429	17.2
67–68	0.017437	78,779	1,374	78,093	1,301,001	16.5
68–69	0.018865	77,406	1,460	76,676	1,222,908	15.8
69–70	0.020535	75,945	1,560	75,166	1,146,232	15.1
70–71	0.022455	74,386	1,670	73,551	1,071,067	14.4
71–72	0.024637	72,716	1,791	71,820	997,516	13.7
72–73	0.027009	70,924	1,916	69,966	925,696	13.1
73–74	0.029589	69,009	2,042	67,988	855,730	12.4
74–75	0.032374	66,967	2,168	65,883	787,742	11.8
75–76	0.035224	64,799	2,282	63,657	721,859	11.1
76–77	0.038692	62,516	2,419	61,307	658,202	10.5
77–78	0.042856	60,097	2,576	58,810	596,895	9.9
78–79	0.047494	57,522	2,732	56,156	538,086	9.4
79–80	0.052530	54,790	2,878	53,351	481,930	8.8
80–81	0.058280	51,912	3,025	50,399	428,579	8.3
81–82	0.064699	48,886	3,163	47,305	378,180	7.7
82–83	0.071548	45,723	3,271	44,088	330,875	7.2
83–84	0.079230	42,452	3,363	40,770	286,788	6.8
84–85	0.088307	39,089	3,452	37,363	246,018	6.3
85–86	0.098159	35,637	3,498	33,888	208,655	5.9
86–87	0.109768	32,139	3,528	30,375	174,767	5.4
87–88	0.122454	28,611	3,504	26,859	144,392	5.0
88–89	0.136248	25,107	3,421	23,397	117,533	4.7
89–90	0.151164	21,687	3,278	20,047	94,136	4.3
90–91	0.167198	18,408	3,078	16,869	74,089	4.0
91–92	0.184325	15,330	2,826	13,918	57,220	3.7
92–93	0.202494	12,505	2,532	11,239	43,302	3.5
93–94	0.221632	9,973	2,210	8,867	32,063	3.2
94–95	0.241638	7,762	1,876	6,824	23,196	3.0
95–96	0.262384	5,887	1,545	5,114	16,371	2.8
96–97	0.283722	4,342	1,232	3,726	11,257	2.6
97–98	0.305485	3,110	950	2,635	7,531	2.4
98–99	0.327489	2,160	707	1,806	4,896	2.3
99–100	0.349545	1,453	508	1,199	3,089	2.1
100 and over	1.000000	945	945	1,891	1,891	2.0

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 6. Life table for white females: United States, 2013Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table06.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.004515	100,000	451	99,599	8,136,222	81.4
1-2	0.000344	99,549	34	99,531	8,036,623	80.7
2-3	0.000197	99,514	20	99,504	7,937,092	79.8
3-4	0.000148	99,495	15	99,487	7,837,587	78.8
4-5	0.000116	99,480	12	99,474	7,738,100	77.8
5-6	0.000110	99,468	11	99,463	7,638,626	76.8
6-7	0.000097	99,457	10	99,453	7,539,163	75.8
7-8	0.000090	99,448	9	99,443	7,439,711	74.8
8-9	0.000086	99,439	9	99,435	7,340,267	73.8
9-10	0.000085	99,430	8	99,426	7,240,833	72.8
10-11	0.000088	99,422	9	99,418	7,141,407	71.8
11-12	0.000097	99,413	10	99,408	7,041,989	70.8
12-13	0.000112	99,404	11	99,398	6,942,581	69.8
13-14	0.000135	99,392	13	99,386	6,843,183	68.9
14-15	0.000164	99,379	16	99,371	6,743,797	67.9
15-16	0.000195	99,363	19	99,353	6,644,426	66.9
16-17	0.000229	99,343	23	99,332	6,545,074	65.9
17-18	0.000264	99,321	26	99,307	6,445,742	64.9
18-19	0.000302	99,294	30	99,279	6,346,434	63.9
19-20	0.000339	99,264	34	99,247	6,247,155	62.9
20-21	0.000378	99,231	37	99,212	6,147,907	62.0
21-22	0.000415	99,193	41	99,173	6,048,696	61.0
22-23	0.000445	99,152	44	99,130	5,949,523	60.0
23-24	0.000468	99,108	46	99,085	5,850,393	59.0
24-25	0.000487	99,062	48	99,037	5,751,308	58.1
25-26	0.000505	99,013	50	98,988	5,652,271	57.1
26-27	0.000527	98,963	52	98,937	5,553,282	56.1
27-28	0.000552	98,911	55	98,884	5,454,345	55.1
28-29	0.000582	98,857	58	98,828	5,355,461	54.2
29-30	0.000616	98,799	61	98,769	5,256,634	53.2
30-31	0.000654	98,738	65	98,706	5,157,865	52.2
31-32	0.000694	98,674	69	98,639	5,059,159	51.3
32-33	0.000734	98,605	72	98,569	4,960,520	50.3
33-34	0.000775	98,533	76	98,494	4,861,951	49.3
34-35	0.000820	98,456	81	98,416	4,763,457	48.4
35-36	0.000875	98,376	86	98,332	4,665,041	47.4
36-37	0.000941	98,289	93	98,243	4,566,708	46.5
37-38	0.001015	98,197	100	98,147	4,468,465	45.5
38-39	0.001092	98,097	107	98,044	4,370,318	44.6
39-40	0.001172	97,990	115	97,933	4,272,274	43.6
40-41	0.001260	97,875	123	97,814	4,174,342	42.6
41-42	0.001359	97,752	133	97,685	4,076,528	41.7
42-43	0.001473	97,619	144	97,547	3,978,843	40.8
43-44	0.001608	97,475	157	97,397	3,881,295	39.8
44-45	0.001766	97,318	172	97,233	3,783,899	38.9
45-46	0.001935	97,147	188	97,053	3,686,666	37.9
46-47	0.002120	96,959	206	96,856	3,589,613	37.0
47-48	0.002335	96,753	226	96,640	3,492,758	36.1
48-49	0.002579	96,527	249	96,403	3,396,118	35.2
49-50	0.002836	96,278	273	96,142	3,299,715	34.3
50-51	0.003097	96,005	297	95,856	3,203,573	33.4
51-52	0.003357	95,708	321	95,547	3,107,717	32.5
52-53	0.003619	95,387	345	95,214	3,012,170	31.6
53-54	0.003890	95,041	370	94,856	2,916,956	30.7
54-55	0.004178	94,672	396	94,474	2,822,099	29.8
55-56	0.004492	94,276	423	94,064	2,727,625	28.9
56-57	0.004826	93,853	453	93,626	2,633,561	28.1
57-58	0.005172	93,400	483	93,158	2,539,935	27.2
58-59	0.005529	92,917	514	92,660	2,446,777	26.3
59-60	0.005909	92,403	546	92,130	2,354,117	25.5
60-61	0.006318	91,857	580	91,567	2,261,987	24.6

See footnote at end of table.

Table 6. Life table for white females: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table06.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
61–62	0.006784	91,276	619	90,967	2,170,420	23.8
62–63	0.007338	90,657	665	90,325	2,079,453	22.9
63–64	0.007998	89,992	720	89,632	1,989,129	22.1
64–65	0.008756	89,272	782	88,881	1,899,497	21.3
65–66	0.009605	88,491	850	88,066	1,810,615	20.5
66–67	0.010528	87,641	923	87,179	1,722,549	19.7
67–68	0.011521	86,718	999	86,218	1,635,370	18.9
68–69	0.012606	85,719	1,081	85,179	1,549,152	18.1
69–70	0.013815	84,638	1,169	84,054	1,463,973	17.3
70–71	0.015182	83,469	1,267	82,835	1,379,919	16.5
71–72	0.016772	82,202	1,379	81,513	1,297,084	15.8
72–73	0.018554	80,823	1,500	80,073	1,215,571	15.0
73–74	0.020391	79,324	1,618	78,515	1,135,498	14.3
74–75	0.022459	77,706	1,745	76,833	1,056,983	13.6
75–76	0.024761	75,961	1,881	75,020	980,150	12.9
76–77	0.027489	74,080	2,036	73,062	905,130	12.2
77–78	0.030701	72,044	2,212	70,938	832,068	11.5
78–79	0.034314	69,832	2,396	68,634	761,130	10.9
79–80	0.038321	67,436	2,584	66,143	692,497	10.3
80–81	0.042565	64,851	2,760	63,471	626,353	9.7
81–82	0.047152	62,091	2,928	60,627	562,882	9.1
82–83	0.052784	59,163	3,123	57,602	502,255	8.5
83–84	0.059161	56,040	3,315	54,383	444,653	7.9
84–85	0.066717	52,725	3,518	50,966	390,271	7.4
85–86	0.074370	49,207	3,660	47,377	339,305	6.9
86–87	0.083880	45,548	3,821	43,637	291,927	6.4
87–88	0.094412	41,727	3,940	39,757	248,290	6.0
88–89	0.106026	37,788	4,006	35,784	208,532	5.5
89–90	0.118772	33,781	4,012	31,775	172,748	5.1
90–91	0.132688	29,769	3,950	27,794	140,973	4.7
91–92	0.147794	25,819	3,816	23,911	113,179	4.4
92–93	0.164092	22,003	3,611	20,198	89,268	4.1
93–94	0.181558	18,392	3,339	16,723	69,070	3.8
94–95	0.200143	15,053	3,013	13,547	52,348	3.5
95–96	0.219768	12,040	2,646	10,717	38,801	3.2
96–97	0.240327	9,394	2,258	8,265	28,084	3.0
97–98	0.261682	7,137	1,868	6,203	19,818	2.8
98–99	0.283673	5,269	1,495	4,522	13,615	2.6
99–100	0.306114	3,774	1,155	3,197	9,094	2.4
100 and over	1.000000	2,619	2,619	5,897	5,897	2.3

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 7. Life table for the black population: United States, 2013Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table07.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.011224	100,000	1,122	99,015	7,551,357	75.5
1-2	0.000618	98,878	61	98,847	7,452,343	75.4
2-3	0.000362	98,817	36	98,799	7,353,496	74.4
3-4	0.000260	98,781	26	98,768	7,254,697	73.4
4-5	0.000242	98,755	24	98,743	7,155,929	72.5
5-6	0.000216	98,731	21	98,720	7,057,186	71.5
6-7	0.000193	98,710	19	98,700	6,958,466	70.5
7-8	0.000172	98,691	17	98,682	6,859,765	69.5
8-9	0.000149	98,674	15	98,667	6,761,083	68.5
9-10	0.000126	98,659	12	98,653	6,662,416	67.5
10-11	0.000111	98,647	11	98,641	6,563,764	66.5
11-12	0.000111	98,636	11	98,630	6,465,122	65.5
12-13	0.000141	98,625	14	98,618	6,366,492	64.6
13-14	0.000206	98,611	20	98,601	6,267,874	63.6
14-15	0.000298	98,591	29	98,576	6,169,273	62.6
15-16	0.000396	98,561	39	98,542	6,070,698	61.6
16-17	0.000496	98,522	49	98,498	5,972,156	60.6
17-18	0.000608	98,473	60	98,443	5,873,658	59.6
18-19	0.000729	98,413	72	98,378	5,775,215	58.7
19-20	0.000849	98,342	84	98,300	5,676,837	57.7
20-21	0.000969	98,258	95	98,211	5,578,537	56.8
21-22	0.001077	98,163	106	98,110	5,480,327	55.8
22-23	0.001160	98,057	114	98,000	5,382,217	54.9
23-24	0.001218	97,943	119	97,884	5,284,216	54.0
24-25	0.001260	97,824	123	97,763	5,186,333	53.0
25-26	0.001300	97,701	127	97,637	5,088,570	52.1
26-27	0.001348	97,574	132	97,508	4,990,933	51.2
27-28	0.001398	97,442	136	97,374	4,893,425	50.2
28-29	0.001450	97,306	141	97,235	4,796,051	49.3
29-30	0.001501	97,165	146	97,092	4,698,815	48.4
30-31	0.001552	97,019	151	96,944	4,601,723	47.4
31-32	0.001604	96,869	155	96,791	4,504,779	46.5
32-33	0.001658	96,713	160	96,633	4,407,988	45.6
33-34	0.001716	96,553	166	96,470	4,311,355	44.7
34-35	0.001783	96,387	172	96,301	4,214,885	43.7
35-36	0.001865	96,215	179	96,125	4,118,584	42.8
36-37	0.001963	96,036	189	95,942	4,022,459	41.9
37-38	0.002072	95,847	199	95,748	3,926,517	41.0
38-39	0.002187	95,649	209	95,544	3,830,769	40.1
39-40	0.002309	95,440	220	95,329	3,735,225	39.1
40-41	0.002444	95,219	233	95,103	3,639,896	38.2
41-42	0.002603	94,986	247	94,863	3,544,793	37.3
42-43	0.002793	94,739	265	94,607	3,449,930	36.4
43-44	0.003026	94,475	286	94,332	3,355,323	35.5
44-45	0.003302	94,189	311	94,033	3,260,992	34.6
45-46	0.003606	93,878	339	93,708	3,166,958	33.7
46-47	0.003939	93,539	368	93,355	3,073,250	32.9
47-48	0.004318	93,171	402	92,970	2,979,895	32.0
48-49	0.004742	92,768	440	92,548	2,886,925	31.1
49-50	0.005201	92,329	480	92,088	2,794,377	30.3
50-51	0.005664	91,848	520	91,588	2,702,289	29.4
51-52	0.006147	91,328	561	91,047	2,610,700	28.6
52-53	0.006700	90,767	608	90,463	2,519,653	27.8
53-54	0.007354	90,159	663	89,827	2,429,190	26.9
54-55	0.008100	89,496	725	89,133	2,339,363	26.1
55-56	0.008902	88,771	790	88,375	2,250,230	25.3
56-57	0.009723	87,980	855	87,553	2,161,855	24.6
57-58	0.010571	87,125	921	86,664	2,074,302	23.8
58-59	0.011438	86,204	986	85,711	1,987,638	23.1
59-60	0.012330	85,218	1,051	84,693	1,901,927	22.3
60-61	0.013320	84,167	1,121	83,607	1,817,234	21.6

See footnote at end of table.

Table 7. Life table for the black population: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table07.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
61–62	0.014377	83,046	1,194	82,449	1,733,627	20.9
62–63	0.015383	81,852	1,259	81,223	1,651,178	20.2
63–64	0.016273	80,593	1,312	79,937	1,569,955	19.5
64–65	0.017089	79,282	1,355	78,604	1,490,018	18.8
65–66	0.017924	77,927	1,397	77,228	1,411,414	18.1
66–67	0.018913	76,530	1,447	75,806	1,334,186	17.4
67–68	0.020127	75,083	1,511	74,327	1,258,379	16.8
68–69	0.021640	73,571	1,592	72,775	1,184,052	16.1
69–70	0.023380	71,979	1,683	71,138	1,111,277	15.4
70–71	0.025321	70,296	1,780	69,406	1,040,139	14.8
71–72	0.027405	68,516	1,878	67,578	970,733	14.2
72–73	0.029577	66,639	1,971	65,653	903,155	13.6
73–74	0.031888	64,668	2,062	63,637	837,502	13.0
74–75	0.034370	62,606	2,152	61,530	773,865	12.4
75–76	0.036878	60,454	2,229	59,339	712,335	11.8
76–77	0.039960	58,225	2,327	57,061	652,996	11.2
77–78	0.043355	55,898	2,423	54,686	595,934	10.7
78–79	0.047060	53,474	2,517	52,216	541,248	10.1
79–80	0.051577	50,958	2,628	49,644	489,032	9.6
80–81	0.056539	48,330	2,732	46,963	439,388	9.1
81–82	0.061113	45,597	2,787	44,204	392,425	8.6
82–83	0.066414	42,811	2,843	41,389	348,221	8.1
83–84	0.072881	39,967	2,913	38,511	306,832	7.7
84–85	0.081475	37,055	3,019	35,545	268,321	7.2
85–86	0.088673	34,036	3,018	32,527	232,776	6.8
86–87	0.096401	31,018	2,990	29,522	200,249	6.5
87–88	0.104681	28,027	2,934	26,560	170,727	6.1
88–89	0.113531	25,093	2,849	23,669	144,166	5.7
89–90	0.122965	22,245	2,735	20,877	120,497	5.4
90–91	0.132995	19,509	2,595	18,212	99,620	5.1
91–92	0.143627	16,915	2,429	15,700	81,409	4.8
92–93	0.154862	14,485	2,243	13,364	65,709	4.5
93–94	0.166695	12,242	2,041	11,222	52,345	4.3
94–95	0.179117	10,201	1,827	9,288	41,123	4.0
95–96	0.192108	8,374	1,609	7,570	31,836	3.8
96–97	0.205644	6,765	1,391	6,070	24,266	3.6
97–98	0.219693	5,374	1,181	4,784	18,196	3.4
98–99	0.234214	4,193	982	3,702	13,412	3.2
99–100	0.249159	3,211	800	2,811	9,710	3.0
100 and over	1.000000	2,411	2,411	6,899	6,899	2.9

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 8. Life table for black males: United States, 2013Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table08.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.012032	100,000	1,203	98,944	7,232,888	72.3
1-2	0.000678	98,797	67	98,763	7,133,945	72.2
2-3	0.000408	98,730	40	98,710	7,035,181	71.3
3-4	0.000283	98,690	28	98,676	6,936,472	70.3
4-5	0.000254	98,662	25	98,649	6,837,796	69.3
5-6	0.000236	98,636	23	98,625	6,739,147	68.3
6-7	0.000214	98,613	21	98,603	6,640,522	67.3
7-8	0.000191	98,592	19	98,583	6,541,920	66.4
8-9	0.000161	98,573	16	98,565	6,443,337	65.4
9-10	0.000127	98,557	12	98,551	6,344,772	64.4
10-11	0.000100	98,545	10	98,540	6,246,221	63.4
11-12	0.000100	98,535	10	98,530	6,147,681	62.4
12-13	0.000150	98,525	15	98,518	6,049,150	61.4
13-14	0.000260	98,510	26	98,498	5,950,633	60.4
14-15	0.000417	98,485	41	98,464	5,852,135	59.4
15-16	0.000582	98,444	57	98,415	5,753,671	58.4
16-17	0.000746	98,386	73	98,350	5,655,255	57.5
17-18	0.000927	98,313	91	98,268	5,556,906	56.5
18-19	0.001118	98,222	110	98,167	5,458,638	55.6
19-20	0.001304	98,112	128	98,048	5,360,471	54.6
20-21	0.001490	97,984	146	97,911	5,262,423	53.7
21-22	0.001655	97,838	162	97,757	5,164,512	52.8
22-23	0.001778	97,676	174	97,590	5,066,754	51.9
23-24	0.001858	97,503	181	97,412	4,969,165	51.0
24-25	0.001908	97,322	186	97,229	4,871,753	50.1
25-26	0.001950	97,136	189	97,041	4,774,524	49.2
26-27	0.002001	96,946	194	96,850	4,677,483	48.2
27-28	0.002053	96,753	199	96,653	4,580,633	47.3
28-29	0.002110	96,554	204	96,452	4,483,980	46.4
29-30	0.002166	96,350	209	96,246	4,387,528	45.5
30-31	0.002220	96,141	213	96,035	4,291,282	44.6
31-32	0.002273	95,928	218	95,819	4,195,248	43.7
32-33	0.002324	95,710	222	95,599	4,099,429	42.8
33-34	0.002378	95,488	227	95,374	4,003,830	41.9
34-35	0.002438	95,261	232	95,144	3,908,456	41.0
35-36	0.002515	95,028	239	94,909	3,813,311	40.1
36-37	0.002610	94,789	247	94,666	3,718,403	39.2
37-38	0.002714	94,542	257	94,414	3,623,737	38.3
38-39	0.002824	94,285	266	94,152	3,529,324	37.4
39-40	0.002942	94,019	277	93,881	3,435,171	36.5
40-41	0.003075	93,742	288	93,598	3,341,291	35.6
41-42	0.003239	93,454	303	93,303	3,247,692	34.8
42-43	0.003449	93,151	321	92,991	3,154,390	33.9
43-44	0.003718	92,830	345	92,658	3,061,399	33.0
44-45	0.004046	92,485	374	92,298	2,968,741	32.1
45-46	0.004416	92,111	407	91,907	2,876,443	31.2
46-47	0.004821	91,704	442	91,483	2,784,536	30.4
47-48	0.005270	91,262	481	91,021	2,693,053	29.5
48-49	0.005757	90,781	523	90,520	2,602,032	28.7
49-50	0.006278	90,258	567	89,975	2,511,512	27.8
50-51	0.006796	89,692	610	89,387	2,421,537	27.0
51-52	0.007357	89,082	655	88,754	2,332,150	26.2
52-53	0.008051	88,427	712	88,071	2,243,396	25.4
53-54	0.008932	87,715	783	87,323	2,155,325	24.6
54-55	0.009978	86,931	867	86,498	2,068,001	23.8
55-56	0.011117	86,064	957	85,586	1,981,504	23.0
56-57	0.012275	85,107	1,045	84,585	1,895,918	22.3
57-58	0.013465	84,063	1,132	83,497	1,811,333	21.5
58-59	0.014666	82,931	1,216	82,323	1,727,837	20.8
59-60	0.015890	81,714	1,298	81,065	1,645,514	20.1
60-61	0.017262	80,416	1,388	79,722	1,564,449	19.5

See footnote at end of table.

Table 8. Life table for black males: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table08.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
61–62	0.018737	79,028	1,481	78,287	1,484,727	18.8
62–63	0.020109	77,547	1,559	76,767	1,406,440	18.1
63–64	0.021256	75,988	1,615	75,180	1,329,672	17.5
64–65	0.022230	74,372	1,653	73,546	1,254,492	16.9
65–66	0.023173	72,719	1,685	71,877	1,180,946	16.2
66–67	0.024302	71,034	1,726	70,171	1,109,070	15.6
67–68	0.025724	69,308	1,783	68,416	1,038,899	15.0
68–69	0.027576	67,525	1,862	66,594	970,482	14.4
69–70	0.029767	65,663	1,955	64,686	903,889	13.8
70–71	0.032193	63,708	2,051	62,683	839,203	13.2
71–72	0.034831	61,657	2,148	60,584	776,520	12.6
72–73	0.037624	59,510	2,239	58,390	715,937	12.0
73–74	0.040539	57,271	2,322	56,110	657,546	11.5
74–75	0.043462	54,949	2,388	53,755	601,436	10.9
75–76	0.046611	52,561	2,450	51,336	547,681	10.4
76–77	0.050828	50,111	2,547	48,837	496,346	9.9
77–78	0.054913	47,564	2,612	46,258	447,508	9.4
78–79	0.059133	44,952	2,658	43,623	401,250	8.9
79–80	0.064315	42,294	2,720	40,934	357,627	8.5
80–81	0.069476	39,574	2,749	38,199	316,693	8.0
81–82	0.074890	36,824	2,758	35,445	278,494	7.6
82–83	0.081364	34,067	2,772	32,681	243,049	7.1
83–84	0.089411	31,295	2,798	29,896	210,368	6.7
84–85	0.097540	28,497	2,780	27,107	180,473	6.3
85–86	0.106272	25,717	2,733	24,351	153,366	6.0
86–87	0.115627	22,984	2,658	21,655	129,015	5.6
87–88	0.125621	20,326	2,553	19,050	107,360	5.3
88–89	0.136264	17,773	2,422	16,562	88,310	5.0
89–90	0.147564	15,351	2,265	14,219	71,748	4.7
90–91	0.159519	13,086	2,087	12,042	57,529	4.4
91–92	0.172121	10,998	1,893	10,052	45,487	4.1
92–93	0.185355	9,105	1,688	8,262	35,435	3.9
93–94	0.199197	7,418	1,478	6,679	27,174	3.7
94–95	0.213613	5,940	1,269	5,306	20,495	3.5
95–96	0.228563	4,671	1,068	4,137	15,189	3.3
96–97	0.243996	3,604	879	3,164	11,052	3.1
97–98	0.259852	2,724	708	2,370	7,888	2.9
98–99	0.276066	2,016	557	1,738	5,517	2.7
99–100	0.292564	1,460	427	1,246	3,779	2.6
100 and over	1.000000	1,033	1,033	2,533	2,533	2.5

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 9. Life table for black females: United States, 2013Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table09.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.010390	100,000	1,039	99,088	7,840,937	78.4
1-2	0.000555	98,961	55	98,934	7,741,849	78.2
2-3	0.000315	98,906	31	98,891	7,642,916	77.3
3-4	0.000236	98,875	23	98,863	7,544,025	76.3
4-5	0.000230	98,852	23	98,840	7,445,162	75.3
5-6	0.000195	98,829	19	98,819	7,346,322	74.3
6-7	0.000171	98,810	17	98,801	7,247,503	73.3
7-8	0.000152	98,793	15	98,785	7,148,701	72.4
8-9	0.000137	98,778	14	98,771	7,049,916	71.4
9-10	0.000126	98,764	12	98,758	6,951,145	70.4
10-11	0.000121	98,752	12	98,746	6,852,387	69.4
11-12	0.000123	98,740	12	98,734	6,753,641	68.4
12-13	0.000132	98,728	13	98,721	6,654,908	67.4
13-14	0.000150	98,715	15	98,707	6,556,187	66.4
14-15	0.000175	98,700	17	98,691	6,457,479	65.4
15-16	0.000204	98,683	20	98,673	6,358,788	64.4
16-17	0.000236	98,662	23	98,651	6,260,116	63.4
17-18	0.000277	98,639	27	98,626	6,161,465	62.5
18-19	0.000327	98,612	32	98,596	6,062,839	61.5
19-20	0.000380	98,580	37	98,561	5,964,244	60.5
20-21	0.000434	98,542	43	98,521	5,865,683	59.5
21-22	0.000485	98,499	48	98,476	5,767,162	58.6
22-23	0.000530	98,452	52	98,426	5,668,686	57.6
23-24	0.000572	98,399	56	98,371	5,570,261	56.6
24-25	0.000614	98,343	60	98,313	5,471,890	55.6
25-26	0.000662	98,283	65	98,250	5,373,577	54.7
26-27	0.000716	98,218	70	98,183	5,275,326	53.7
27-28	0.000773	98,147	76	98,109	5,177,144	52.7
28-29	0.000827	98,072	81	98,031	5,079,034	51.8
29-30	0.000878	97,990	86	97,947	4,981,003	50.8
30-31	0.000931	97,904	91	97,859	4,883,056	49.9
31-32	0.000989	97,813	97	97,765	4,785,197	48.9
32-33	0.001050	97,716	103	97,665	4,687,433	48.0
33-34	0.001115	97,614	109	97,559	4,589,767	47.0
34-35	0.001191	97,505	116	97,447	4,492,208	46.1
35-36	0.001280	97,389	125	97,327	4,394,761	45.1
36-37	0.001383	97,264	135	97,197	4,297,435	44.2
37-38	0.001498	97,130	145	97,057	4,200,238	43.2
38-39	0.001619	96,984	157	96,906	4,103,180	42.3
39-40	0.001746	96,827	169	96,743	4,006,275	41.4
40-41	0.001883	96,658	182	96,567	3,909,532	40.4
41-42	0.002037	96,476	197	96,378	3,812,965	39.5
42-43	0.002210	96,280	213	96,173	3,716,587	38.6
43-44	0.002410	96,067	232	95,951	3,620,414	37.7
44-45	0.002640	95,835	253	95,709	3,524,463	36.8
45-46	0.002885	95,582	276	95,444	3,428,754	35.9
46-47	0.003152	95,307	300	95,156	3,333,310	35.0
47-48	0.003469	95,006	330	94,841	3,238,153	34.1
48-49	0.003839	94,677	363	94,495	3,143,312	33.2
49-50	0.004244	94,313	400	94,113	3,048,817	32.3
50-51	0.004659	93,913	438	93,694	2,954,704	31.5
51-52	0.005076	93,475	475	93,238	2,861,010	30.6
52-53	0.005509	93,001	512	92,744	2,767,773	29.8
53-54	0.005968	92,488	552	92,212	2,675,028	28.9
54-55	0.006457	91,936	594	91,640	2,582,816	28.1
55-56	0.006973	91,343	637	91,024	2,491,176	27.3
56-57	0.007512	90,706	681	90,365	2,400,152	26.5
57-58	0.008081	90,024	727	89,661	2,309,787	25.7
58-59	0.008684	89,297	775	88,909	2,220,126	24.9
59-60	0.009325	88,521	825	88,109	2,131,217	24.1
60-61	0.010033	87,696	880	87,256	2,043,108	23.3

See footnote at end of table.

Table 9. Life table for black females: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table09.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
61–62	0.010789	86,816	937	86,348	1,955,852	22.5
62–63	0.011538	85,880	991	85,384	1,869,504	21.8
63–64	0.012255	84,889	1,040	84,368	1,784,120	21.0
64–65	0.012971	83,848	1,088	83,304	1,699,752	20.3
65–66	0.013745	82,761	1,138	82,192	1,616,447	19.5
66–67	0.014651	81,623	1,196	81,025	1,534,255	18.8
67–68	0.015737	80,427	1,266	79,794	1,453,230	18.1
68–69	0.017036	79,162	1,349	78,487	1,373,436	17.3
69–70	0.018492	77,813	1,439	77,094	1,294,949	16.6
70–71	0.020134	76,374	1,538	75,605	1,217,855	15.9
71–72	0.021882	74,836	1,638	74,018	1,142,250	15.3
72–73	0.023697	73,199	1,735	72,331	1,068,232	14.6
73–74	0.025673	71,464	1,835	70,547	995,901	13.9
74–75	0.027945	69,629	1,946	68,657	925,354	13.3
75–76	0.030111	67,684	2,038	66,665	856,697	12.7
76–77	0.032545	65,646	2,136	64,577	790,033	12.0
77–78	0.035669	63,509	2,265	62,377	725,455	11.4
78–79	0.039227	61,244	2,402	60,043	663,079	10.8
79–80	0.043565	58,842	2,563	57,560	603,036	10.2
80–81	0.048676	56,278	2,739	54,908	545,476	9.7
81–82	0.053053	53,539	2,840	52,118	490,568	9.2
82–83	0.058034	50,698	2,942	49,227	438,449	8.6
83–84	0.064057	47,756	3,059	46,226	389,222	8.2
84–85	0.071260	44,697	3,185	43,104	342,996	7.7
85–86	0.078341	41,512	3,252	39,886	299,891	7.2
86–87	0.086023	38,260	3,291	36,614	260,005	6.8
87–88	0.094338	34,969	3,299	33,319	223,391	6.4
88–89	0.103313	31,670	3,272	30,034	190,072	6.0
89–90	0.112974	28,398	3,208	26,794	160,038	5.6
90–91	0.123341	25,190	3,107	23,636	133,245	5.3
91–92	0.134427	22,083	2,969	20,598	109,609	5.0
92–93	0.146242	19,114	2,795	17,716	89,010	4.7
93–94	0.158786	16,319	2,591	15,023	71,294	4.4
94–95	0.172050	13,728	2,362	12,547	56,271	4.1
95–96	0.186016	11,366	2,114	10,309	43,724	3.8
96–97	0.200656	9,252	1,856	8,323	33,415	3.6
97–98	0.215931	7,395	1,597	6,597	25,092	3.4
98–99	0.231789	5,798	1,344	5,126	18,495	3.2
99–100	0.248172	4,454	1,105	3,902	13,369	3.0
100 and over	1.000000	3,349	3,349	9,467	9,467	2.8

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 10. Life table for the Hispanic population: United States, 2013Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table10.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.004998	100,000	500	99,552	8,185,857	81.9
1-2	0.000310	99,500	31	99,485	8,086,304	81.3
2-3	0.000206	99,469	21	99,459	7,986,820	80.3
3-4	0.000172	99,449	17	99,440	7,887,361	79.3
4-5	0.000135	99,432	13	99,425	7,787,920	78.3
5-6	0.000112	99,418	11	99,413	7,688,495	77.3
6-7	0.000096	99,407	10	99,402	7,589,083	76.3
7-8	0.000085	99,398	8	99,393	7,489,681	75.4
8-9	0.000079	99,389	8	99,385	7,390,287	74.4
9-10	0.000078	99,381	8	99,377	7,290,902	73.4
10-11	0.000082	99,373	8	99,369	7,191,525	72.4
11-12	0.000094	99,365	9	99,361	7,092,156	71.4
12-13	0.000116	99,356	12	99,350	6,992,795	70.4
13-14	0.000149	99,344	15	99,337	6,893,445	69.4
14-15	0.000191	99,330	19	99,320	6,794,108	68.4
15-16	0.000236	99,311	23	99,299	6,694,788	67.4
16-17	0.000284	99,287	28	99,273	6,595,489	66.4
17-18	0.000340	99,259	34	99,242	6,496,216	65.4
18-19	0.000402	99,225	40	99,205	6,396,974	64.5
19-20	0.000467	99,185	46	99,162	6,297,769	63.5
20-21	0.000534	99,139	53	99,112	6,198,607	62.5
21-22	0.000595	99,086	59	99,057	6,099,494	61.6
22-23	0.000641	99,027	63	98,995	6,000,438	60.6
23-24	0.000666	98,964	66	98,931	5,901,443	59.6
24-25	0.000677	98,898	67	98,864	5,802,512	58.7
25-26	0.000683	98,831	68	98,797	5,703,648	57.7
26-27	0.000692	98,763	68	98,729	5,604,851	56.8
27-28	0.000702	98,695	69	98,660	5,506,122	55.8
28-29	0.000716	98,626	71	98,590	5,407,462	54.8
29-30	0.000733	98,555	72	98,519	5,308,871	53.9
30-31	0.000751	98,483	74	98,446	5,210,353	52.9
31-32	0.000769	98,409	76	98,371	5,111,907	51.9
32-33	0.000790	98,333	78	98,294	5,013,536	51.0
33-34	0.000814	98,255	80	98,215	4,915,242	50.0
34-35	0.000843	98,175	83	98,134	4,817,027	49.1
35-36	0.000878	98,093	86	98,049	4,718,893	48.1
36-37	0.000920	98,006	90	97,961	4,620,844	47.1
37-38	0.000969	97,916	95	97,869	4,522,882	46.2
38-39	0.001024	97,821	100	97,771	4,425,014	45.2
39-40	0.001088	97,721	106	97,668	4,327,242	44.3
40-41	0.001158	97,615	113	97,558	4,229,574	43.3
41-42	0.001240	97,502	121	97,441	4,132,016	42.4
42-43	0.001346	97,381	131	97,315	4,034,574	41.4
43-44	0.001482	97,250	144	97,178	3,937,259	40.5
44-45	0.001648	97,106	160	97,026	3,840,081	39.5
45-46	0.001832	96,946	178	96,857	3,743,055	38.6
46-47	0.002029	96,768	196	96,670	3,646,198	37.7
47-48	0.002245	96,572	217	96,463	3,549,528	36.8
48-49	0.002477	96,355	239	96,236	3,453,065	35.8
49-50	0.002723	96,116	262	95,985	3,356,829	34.9
50-51	0.002988	95,855	286	95,711	3,260,844	34.0
51-52	0.003271	95,568	313	95,412	3,165,133	33.1
52-53	0.003565	95,256	340	95,086	3,069,721	32.2
53-54	0.003871	94,916	367	94,732	2,974,635	31.3
54-55	0.004195	94,549	397	94,350	2,879,903	30.5
55-56	0.004542	94,152	428	93,938	2,785,553	29.6
56-57	0.004920	93,724	461	93,494	2,691,615	28.7
57-58	0.005333	93,263	497	93,014	2,598,121	27.9
58-59	0.005784	92,766	537	92,497	2,505,106	27.0
59-60	0.006276	92,229	579	91,940	2,412,609	26.2
60-61	0.006825	91,650	625	91,338	2,320,669	25.3

See footnotes at end of table.

Table 10. Life table for the Hispanic population: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table10.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
61–62	0.007419	91,025	675	90,687	2,229,332	24.5
62–63	0.008024	90,350	725	89,987	2,138,644	23.7
63–64	0.008611	89,625	772	89,239	2,048,657	22.9
64–65	0.009190	88,853	817	88,444	1,959,419	22.1
65–66	0.009802	88,036	863	87,605	1,870,974	21.3
66–67	0.010490	87,173	914	86,716	1,783,369	20.5
67–68	0.011266	86,259	972	85,773	1,696,653	19.7
68–69	0.012171	85,287	1,038	84,768	1,610,880	18.9
69–70	0.013226	84,249	1,114	83,692	1,526,112	18.1
70–71	0.014421	83,135	1,199	82,535	1,442,421	17.4
71–72	0.015770	81,936	1,292	81,290	1,359,885	16.6
72–73	0.017324	80,644	1,397	79,945	1,278,595	15.9
73–74	0.019081	79,247	1,512	78,491	1,198,650	15.1
74–75	0.021020	77,735	1,634	76,918	1,120,160	14.4
75–76	0.023094	76,101	1,757	75,222	1,043,242	13.7
76–77	0.025337	74,343	1,884	73,401	968,020	13.0
77–78	0.027962	72,460	2,026	71,447	894,619	12.3
78–79	0.031036	70,433	2,186	69,340	823,172	11.7
79–80	0.034510	68,247	2,355	67,070	753,832	11.0
80–81	0.038324	65,892	2,525	64,630	686,762	10.4
81–82	0.042571	63,367	2,698	62,018	622,132	9.8
82–83	0.047321	60,669	2,871	59,234	560,114	9.2
83–84	0.052669	57,798	3,044	56,276	500,880	8.7
84–85	0.058998	54,754	3,230	53,139	444,604	8.1
85–86	0.065544	51,524	3,377	49,835	391,465	7.6
86–87	0.073587	48,147	3,543	46,375	341,629	7.1
87–88	0.082466	44,604	3,678	42,765	295,254	6.6
88–89	0.092231	40,925	3,775	39,038	252,489	6.2
89–90	0.102925	37,151	3,824	35,239	213,451	5.7
90–91	0.114582	33,327	3,819	31,418	178,212	5.3
91–92	0.127225	29,508	3,754	27,631	146,794	5.0
92–93	0.140864	25,754	3,628	23,940	119,163	4.6
93–94	0.155491	22,126	3,440	20,406	95,223	4.3
94–95	0.171078	18,686	3,197	17,088	74,816	4.0
95–96	0.187578	15,489	2,905	14,036	57,729	3.7
96–97	0.204921	12,584	2,579	11,294	43,692	3.5
97–98	0.223014	10,005	2,231	8,889	32,398	3.2
98–99	0.241743	7,774	1,879	6,834	23,509	3.0
99–100	0.260976	5,895	1,538	5,125	16,674	2.8
100 and over	1.000000	4,356	4,356	11,549	11,549	2.7

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates. Updated classification ratios were applied; see Technical Notes.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 11. Life table for Hispanic males: United States, 2013Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table11.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.005361	100,000	536	99,520	7,921,949	79.2
1-2	0.000349	99,464	35	99,446	7,822,429	78.6
2-3	0.000208	99,429	21	99,419	7,722,983	77.7
3-4	0.000181	99,408	18	99,399	7,623,564	76.7
4-5	0.000153	99,390	15	99,383	7,524,165	75.7
5-6	0.000124	99,375	12	99,369	7,424,782	74.7
6-7	0.000108	99,363	11	99,358	7,325,413	73.7
7-8	0.000095	99,352	9	99,348	7,226,055	72.7
8-9	0.000085	99,343	8	99,339	7,126,708	71.7
9-10	0.000077	99,334	8	99,331	7,027,369	70.7
10-11	0.000074	99,327	7	99,323	6,928,038	69.7
11-12	0.000083	99,319	8	99,315	6,828,715	68.8
12-13	0.000110	99,311	11	99,306	6,729,400	67.8
13-14	0.000159	99,300	16	99,292	6,630,094	66.8
14-15	0.000226	99,284	22	99,273	6,530,802	65.8
15-16	0.000299	99,262	30	99,247	6,431,529	64.8
16-17	0.000375	99,232	37	99,214	6,332,282	63.8
17-18	0.000461	99,195	46	99,172	6,233,068	62.8
18-19	0.000555	99,149	55	99,122	6,133,896	61.9
19-20	0.000652	99,094	65	99,062	6,034,774	60.9
20-21	0.000750	99,030	74	98,993	5,935,712	59.9
21-22	0.000839	98,955	83	98,914	5,836,719	59.0
22-23	0.000906	98,872	90	98,828	5,737,805	58.0
23-24	0.000946	98,783	93	98,736	5,638,978	57.1
24-25	0.000965	98,689	95	98,642	5,540,241	56.1
25-26	0.000979	98,594	97	98,546	5,441,600	55.2
26-27	0.000994	98,498	98	98,449	5,343,054	54.2
27-28	0.001007	98,400	99	98,350	5,244,605	53.3
28-29	0.001017	98,301	100	98,251	5,146,255	52.4
29-30	0.001027	98,201	101	98,150	5,048,004	51.4
30-31	0.001036	98,100	102	98,049	4,949,854	50.5
31-32	0.001046	97,998	102	97,947	4,851,805	49.5
32-33	0.001063	97,896	104	97,844	4,753,858	48.6
33-34	0.001091	97,792	107	97,738	4,656,015	47.6
34-35	0.001130	97,685	110	97,630	4,558,277	46.7
35-36	0.001178	97,575	115	97,517	4,460,647	45.7
36-37	0.001233	97,460	120	97,400	4,363,130	44.8
37-38	0.001295	97,339	126	97,276	4,265,730	43.8
38-39	0.001362	97,213	132	97,147	4,168,454	42.9
39-40	0.001437	97,081	139	97,011	4,071,307	41.9
40-41	0.001519	96,941	147	96,868	3,974,296	41.0
41-42	0.001617	96,794	157	96,716	3,877,428	40.1
42-43	0.001744	96,638	168	96,553	3,780,712	39.1
43-44	0.001907	96,469	184	96,377	3,684,158	38.2
44-45	0.002104	96,285	203	96,184	3,587,781	37.3
45-46	0.002323	96,083	223	95,971	3,491,597	36.3
46-47	0.002559	95,860	245	95,737	3,395,626	35.4
47-48	0.002822	95,614	270	95,479	3,299,889	34.5
48-49	0.003113	95,344	297	95,196	3,204,410	33.6
49-50	0.003430	95,048	326	94,885	3,109,214	32.7
50-51	0.003774	94,722	357	94,543	3,014,329	31.8
51-52	0.004142	94,364	391	94,169	2,919,786	30.9
52-53	0.004533	93,973	426	93,760	2,825,618	30.1
53-54	0.004950	93,547	463	93,316	2,731,857	29.2
54-55	0.005397	93,084	502	92,833	2,638,542	28.3
55-56	0.005886	92,582	545	92,309	2,545,709	27.5
56-57	0.006417	92,037	591	91,742	2,453,399	26.7
57-58	0.006981	91,446	638	91,127	2,361,658	25.8
58-59	0.007573	90,808	688	90,464	2,270,530	25.0
59-60	0.008197	90,120	739	89,751	2,180,066	24.2
60-61	0.008884	89,382	794	88,985	2,090,315	23.4

See footnotes at end of table.

Table 11. Life table for Hispanic males: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table11.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
61–62	0.009636	88,588	854	88,161	2,001,331	22.6
62–63	0.010411	87,734	913	87,277	1,913,170	21.8
63–64	0.011183	86,821	971	86,335	1,825,893	21.0
64–65	0.011960	85,850	1,027	85,336	1,739,558	20.3
65–66	0.012771	84,823	1,083	84,281	1,654,221	19.5
66–67	0.013666	83,740	1,144	83,167	1,569,940	18.7
67–68	0.014685	82,595	1,213	81,989	1,486,773	18.0
68–69	0.015889	81,382	1,293	80,736	1,404,784	17.3
69–70	0.017301	80,089	1,386	79,396	1,324,048	16.5
70–71	0.018922	78,704	1,489	77,959	1,244,652	15.8
71–72	0.020724	77,214	1,600	76,414	1,166,693	15.1
72–73	0.022683	75,614	1,715	74,757	1,090,279	14.4
73–74	0.024717	73,899	1,827	72,986	1,015,522	13.7
74–75	0.026805	72,072	1,932	71,106	942,537	13.1
75–76	0.028935	70,140	2,030	69,126	871,430	12.4
76–77	0.031267	68,111	2,130	67,046	802,305	11.8
77–78	0.034211	65,981	2,257	64,853	735,259	11.1
78–79	0.037873	63,724	2,413	62,517	670,406	10.5
79–80	0.042117	61,311	2,582	60,019	607,889	9.9
80–81	0.046979	58,728	2,759	57,349	547,869	9.3
81–82	0.052553	55,969	2,941	54,499	490,520	8.8
82–83	0.058162	53,028	3,084	51,486	436,022	8.2
83–84	0.064479	49,944	3,220	48,334	384,536	7.7
84–85	0.071971	46,723	3,363	45,042	336,202	7.2
85–86	0.080108	43,361	3,474	41,624	291,160	6.7
86–87	0.089742	39,887	3,580	38,097	249,536	6.3
87–88	0.100316	36,308	3,642	34,487	211,438	5.8
88–89	0.111871	32,665	3,654	30,838	176,952	5.4
89–90	0.124434	29,011	3,610	27,206	146,114	5.0
90–91	0.138019	25,401	3,506	23,648	118,907	4.7
91–92	0.152625	21,895	3,342	20,224	95,259	4.4
92–93	0.168230	18,554	3,121	16,993	75,035	4.0
93–94	0.184791	15,432	2,852	14,006	58,042	3.8
94–95	0.202241	12,581	2,544	11,308	44,035	3.5
95–96	0.220492	10,036	2,213	8,930	32,727	3.3
96–97	0.239431	7,823	1,873	6,887	23,797	3.0
97–98	0.258925	5,950	1,541	5,180	16,911	2.8
98–99	0.278823	4,410	1,229	3,795	11,731	2.7
99–100	0.298959	3,180	951	2,705	7,936	2.5
100 and over	1.000000	2,229	2,229	5,231	5,231	2.3

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates. Updated classification ratios were applied; see Technical Notes.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 12. Life table for Hispanic females: United States, 2013Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table12.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.004620	100,000	462	99,587	8,422,555	84.2
1-2	0.000263	99,538	26	99,525	8,322,968	83.6
2-3	0.000201	99,512	20	99,502	8,223,443	82.6
3-4	0.000160	99,492	16	99,484	8,123,941	81.7
4-5	0.000114	99,476	11	99,470	8,024,457	80.7
5-6	0.000099	99,465	10	99,460	7,924,987	79.7
6-7	0.000082	99,455	8	99,451	7,825,527	78.7
7-8	0.000073	99,447	7	99,443	7,726,077	77.7
8-9	0.000072	99,439	7	99,436	7,626,634	76.7
9-10	0.000077	99,432	8	99,429	7,527,198	75.7
10-11	0.000088	99,425	9	99,420	7,427,769	74.7
11-12	0.000103	99,416	10	99,411	7,328,349	73.7
12-13	0.000120	99,406	12	99,400	7,228,938	72.7
13-14	0.000137	99,394	14	99,387	7,129,538	71.7
14-15	0.000153	99,380	15	99,372	7,030,152	70.7
15-16	0.000171	99,365	17	99,356	6,930,779	69.8
16-17	0.000192	99,348	19	99,338	6,831,423	68.8
17-18	0.000214	99,329	21	99,318	6,732,084	67.8
18-19	0.000239	99,308	24	99,296	6,632,766	66.8
19-20	0.000265	99,284	26	99,271	6,533,471	65.8
20-21	0.000293	99,257	29	99,243	6,434,200	64.8
21-22	0.000319	99,228	32	99,213	6,334,957	63.8
22-23	0.000337	99,197	33	99,180	6,235,745	62.9
23-24	0.000345	99,163	34	99,146	6,136,565	61.9
24-25	0.000346	99,129	34	99,112	6,037,419	60.9
25-26	0.000344	99,095	34	99,078	5,938,307	59.9
26-27	0.000346	99,061	34	99,043	5,839,229	58.9
27-28	0.000354	99,026	35	99,009	5,740,186	58.0
28-29	0.000374	98,991	37	98,973	5,641,177	57.0
29-30	0.000401	98,954	40	98,934	5,542,204	56.0
30-31	0.000431	98,915	43	98,893	5,443,270	55.0
31-32	0.000460	98,872	45	98,849	5,344,377	54.1
32-33	0.000487	98,826	48	98,802	5,245,527	53.1
33-34	0.000509	98,778	50	98,753	5,146,725	52.1
34-35	0.000531	98,728	52	98,702	5,047,972	51.1
35-36	0.000557	98,676	55	98,648	4,949,270	50.2
36-37	0.000588	98,621	58	98,592	4,850,622	49.2
37-38	0.000627	98,563	62	98,532	4,752,031	48.2
38-39	0.000672	98,501	66	98,468	4,653,499	47.2
39-40	0.000726	98,435	71	98,399	4,555,031	46.3
40-41	0.000783	98,363	77	98,325	4,456,632	45.3
41-42	0.000850	98,286	84	98,244	4,358,308	44.3
42-43	0.000934	98,203	92	98,157	4,260,063	43.4
43-44	0.001042	98,111	102	98,060	4,161,906	42.4
44-45	0.001173	98,009	115	97,951	4,063,847	41.5
45-46	0.001318	97,894	129	97,829	3,965,896	40.5
46-47	0.001473	97,765	144	97,693	3,868,066	39.6
47-48	0.001639	97,621	160	97,541	3,770,374	38.6
48-49	0.001812	97,461	177	97,372	3,672,833	37.7
49-50	0.001991	97,284	194	97,187	3,575,461	36.8
50-51	0.002183	97,090	212	96,984	3,478,274	35.8
51-52	0.002386	96,878	231	96,763	3,381,290	34.9
52-53	0.002591	96,647	250	96,522	3,284,527	34.0
53-54	0.002797	96,397	270	96,262	3,188,005	33.1
54-55	0.003010	96,127	289	95,982	3,091,743	32.2
55-56	0.003234	95,838	310	95,683	2,995,761	31.3
56-57	0.003480	95,528	332	95,362	2,900,078	30.4
57-58	0.003764	95,195	358	95,016	2,804,716	29.5
58-59	0.004099	94,837	389	94,643	2,709,700	28.6
59-60	0.004483	94,448	423	94,237	2,615,058	27.7
60-61	0.004920	94,025	463	93,794	2,520,821	26.8

See footnotes at end of table.

Table 12. Life table for Hispanic females: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table12.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
61–62	0.005390	93,562	504	93,310	2,427,027	25.9
62–63	0.005864	93,058	546	92,785	2,333,717	25.1
63–64	0.006315	92,512	584	92,220	2,240,932	24.2
64–65	0.006753	91,928	621	91,618	2,148,712	23.4
65–66	0.007230	91,307	660	90,977	2,057,094	22.5
66–67	0.007778	90,647	705	90,295	1,966,117	21.7
67–68	0.008389	89,942	755	89,565	1,875,822	20.9
68–69	0.009085	89,188	810	88,782	1,786,257	20.0
69–70	0.009892	88,377	874	87,940	1,697,475	19.2
70–71	0.010795	87,503	945	87,031	1,609,535	18.4
71–72	0.011847	86,558	1,025	86,046	1,522,504	17.6
72–73	0.013149	85,533	1,125	84,971	1,436,458	16.8
73–74	0.014752	84,408	1,245	83,786	1,351,487	16.0
74–75	0.016630	83,163	1,383	82,472	1,267,702	15.2
75–76	0.018707	81,780	1,530	81,015	1,185,230	14.5
76–77	0.020920	80,250	1,679	79,411	1,104,215	13.8
77–78	0.023375	78,571	1,837	77,653	1,024,804	13.0
78–79	0.026129	76,735	2,005	75,732	947,151	12.3
79–80	0.029206	74,730	2,183	73,639	871,418	11.7
80–81	0.032486	72,547	2,357	71,369	797,780	11.0
81–82	0.036081	70,190	2,533	68,924	726,411	10.3
82–83	0.040544	67,658	2,743	66,286	657,487	9.7
83–84	0.045635	64,915	2,962	63,434	591,201	9.1
84–85	0.051703	61,952	3,203	60,351	527,767	8.5
85–86	0.057828	58,749	3,397	57,051	467,416	8.0
86–87	0.065571	55,352	3,629	53,537	410,365	7.4
87–88	0.074212	51,722	3,838	49,803	356,828	6.9
88–89	0.083817	47,884	4,013	45,877	307,025	6.4
89–90	0.094446	43,871	4,143	41,799	261,148	6.0
90–91	0.106154	39,727	4,217	37,619	219,349	5.5
91–92	0.118980	35,510	4,225	33,397	181,730	5.1
92–93	0.132950	31,285	4,159	29,205	148,333	4.7
93–94	0.148071	27,126	4,017	25,117	119,128	4.4
94–95	0.164327	23,109	3,797	21,210	94,010	4.1
95–96	0.181676	19,312	3,508	17,557	72,800	3.8
96–97	0.200047	15,803	3,161	14,222	55,242	3.5
97–98	0.219342	12,642	2,773	11,255	41,020	3.2
98–99	0.239433	9,869	2,363	8,687	29,765	3.0
99–100	0.260167	7,506	1,953	6,530	21,077	2.8
100 and over	1.000000	5,553	5,553	14,548	14,548	2.6

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates. Updated classification ratios were applied; see Technical Notes.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 13. Life table for the non-Hispanic white population: United States, 2013Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table13.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.005055	100,000	505	99,556	7,883,218	78.8
1-2	0.000394	99,495	39	99,475	7,783,661	78.2
2-3	0.000237	99,455	24	99,444	7,684,186	77.3
3-4	0.000167	99,432	17	99,423	7,584,743	76.3
4-5	0.000143	99,415	14	99,408	7,485,320	75.3
5-6	0.000135	99,401	13	99,394	7,385,911	74.3
6-7	0.000122	99,387	12	99,381	7,286,517	73.3
7-8	0.000110	99,375	11	99,370	7,187,136	72.3
8-9	0.000100	99,364	10	99,359	7,087,766	71.3
9-10	0.000091	99,354	9	99,350	6,988,407	70.3
10-11	0.000088	99,345	9	99,341	6,889,057	69.3
11-12	0.000095	99,337	9	99,332	6,789,716	68.4
12-13	0.000118	99,327	12	99,321	6,690,384	67.4
13-14	0.000161	99,316	16	99,307	6,591,062	66.4
14-15	0.000220	99,299	22	99,289	6,491,755	65.4
15-16	0.000283	99,278	28	99,264	6,392,466	64.4
16-17	0.000348	99,250	35	99,232	6,293,203	63.4
17-18	0.000425	99,215	42	99,194	6,193,970	62.4
18-19	0.000513	99,173	51	99,147	6,094,776	61.5
19-20	0.000605	99,122	60	99,092	5,995,629	60.5
20-21	0.000699	99,062	69	99,027	5,896,537	59.5
21-22	0.000785	98,993	78	98,954	5,797,510	58.6
22-23	0.000852	98,915	84	98,873	5,698,556	57.6
23-24	0.000895	98,831	88	98,787	5,599,683	56.7
24-25	0.000922	98,742	91	98,697	5,500,896	55.7
25-26	0.000945	98,651	93	98,605	5,402,199	54.8
26-27	0.000971	98,558	96	98,510	5,303,595	53.8
27-28	0.001002	98,462	99	98,413	5,205,085	52.9
28-29	0.001038	98,364	102	98,313	5,106,671	51.9
29-30	0.001079	98,262	106	98,209	5,008,359	51.0
30-31	0.001125	98,155	110	98,100	4,910,150	50.0
31-32	0.001171	98,045	115	97,988	4,812,050	49.1
32-33	0.001212	97,930	119	97,871	4,714,062	48.1
33-34	0.001248	97,812	122	97,750	4,616,192	47.2
34-35	0.001285	97,689	126	97,627	4,518,441	46.3
35-36	0.001333	97,564	130	97,499	4,420,814	45.3
36-37	0.001399	97,434	136	97,366	4,323,316	44.4
37-38	0.001478	97,298	144	97,226	4,225,950	43.4
38-39	0.001569	97,154	152	97,077	4,128,724	42.5
39-40	0.001669	97,001	162	96,920	4,031,647	41.6
40-41	0.001782	96,839	173	96,753	3,934,726	40.6
41-42	0.001910	96,667	185	96,575	3,837,973	39.7
42-43	0.002056	96,482	198	96,383	3,741,399	38.8
43-44	0.002224	96,284	214	96,177	3,645,016	37.9
44-45	0.002421	96,070	233	95,953	3,548,839	36.9
45-46	0.002634	95,837	252	95,711	3,452,886	36.0
46-47	0.002872	95,585	274	95,447	3,357,175	35.1
47-48	0.003157	95,310	301	95,160	3,261,727	34.2
48-49	0.003488	95,009	331	94,844	3,166,568	33.3
49-50	0.003843	94,678	364	94,496	3,071,724	32.4
50-51	0.004196	94,314	396	94,116	2,977,228	31.6
51-52	0.004545	93,918	427	93,705	2,883,112	30.7
52-53	0.004908	93,491	459	93,262	2,789,407	29.8
53-54	0.005298	93,033	493	92,786	2,696,145	29.0
54-55	0.005719	92,540	529	92,275	2,603,359	28.1
55-56	0.006174	92,010	568	91,726	2,511,084	27.3
56-57	0.006647	91,442	608	91,138	2,419,358	26.5
57-58	0.007128	90,835	648	90,511	2,328,219	25.6
58-59	0.007614	90,187	687	89,844	2,237,709	24.8
59-60	0.008116	89,500	726	89,137	2,147,865	24.0
60-61	0.008657	88,774	769	88,390	2,058,728	23.2

See footnotes at end of table.

Table 13. Life table for the non-Hispanic white population: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table13.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
61–62	0.009259	88,005	815	87,598	1,970,338	22.4
62–63	0.009931	87,191	866	86,758	1,882,740	21.6
63–64	0.010682	86,325	922	85,864	1,795,983	20.8
64–65	0.011511	85,402	983	84,911	1,710,119	20.0
65–66	0.012416	84,419	1,048	83,895	1,625,208	19.3
66–67	0.013405	83,371	1,118	82,813	1,541,313	18.5
67–68	0.014500	82,254	1,193	81,657	1,458,500	17.7
68–69	0.015744	81,061	1,276	80,423	1,376,843	17.0
69–70	0.017166	79,785	1,370	79,100	1,296,420	16.2
70–71	0.018792	78,415	1,474	77,678	1,217,320	15.5
71–72	0.020656	76,942	1,589	76,147	1,139,641	14.8
72–73	0.022706	75,352	1,711	74,497	1,063,494	14.1
73–74	0.024876	73,641	1,832	72,725	988,997	13.4
74–75	0.027262	71,810	1,958	70,831	916,272	12.8
75–76	0.029806	69,852	2,082	68,811	845,441	12.1
76–77	0.032859	67,770	2,227	66,656	776,630	11.5
77–78	0.036480	65,543	2,391	64,348	709,974	10.8
78–79	0.040513	63,152	2,558	61,873	645,626	10.2
79–80	0.044914	60,594	2,722	59,233	583,754	9.6
80–81	0.049725	57,872	2,878	56,433	524,521	9.1
81–82	0.054994	54,994	3,024	53,482	468,088	8.5
82–83	0.061019	51,970	3,171	50,384	414,605	8.0
83–84	0.067780	48,799	3,308	47,145	364,221	7.5
84–85	0.075749	45,491	3,446	43,768	317,076	7.0
85–86	0.083957	42,045	3,530	40,280	273,308	6.5
86–87	0.093993	38,515	3,620	36,705	233,027	6.1
87–88	0.105013	34,895	3,664	33,063	196,322	5.6
88–89	0.117062	31,231	3,656	29,403	163,259	5.2
89–90	0.130172	27,575	3,589	25,780	133,857	4.9
90–91	0.144364	23,985	3,463	22,254	108,076	4.5
91–92	0.159644	20,523	3,276	18,885	85,822	4.2
92–93	0.175996	17,246	3,035	15,729	66,938	3.9
93–94	0.193384	14,211	2,748	12,837	51,209	3.6
94–95	0.211748	11,463	2,427	10,249	38,372	3.3
95–96	0.231005	9,036	2,087	7,992	28,123	3.1
96–97	0.251047	6,948	1,744	6,076	20,131	2.9
97–98	0.271743	5,204	1,414	4,497	14,055	2.7
98–99	0.292943	3,790	1,110	3,235	9,558	2.5
99–100	0.314480	2,680	843	2,258	6,323	2.4
100 and over	1.000000	1,837	1,837	4,065	4,065	2.2

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates. Updated classification ratios were applied; see Technical Notes.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 14. Life table for non-Hispanic white males: United States, 2013Spreadsheet version available from: http://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table14.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.005625	100,000	562	99,509	7,647,849	76.5
1-2	0.000451	99,438	45	99,415	7,548,340	75.9
2-3	0.000307	99,393	31	99,377	7,448,925	74.9
3-4	0.000214	99,362	21	99,352	7,349,547	74.0
4-5	0.000184	99,341	18	99,332	7,250,196	73.0
5-6	0.000171	99,323	17	99,314	7,150,864	72.0
6-7	0.000151	99,306	15	99,298	7,051,550	71.0
7-8	0.000135	99,291	13	99,284	6,952,252	70.0
8-9	0.000120	99,277	12	99,271	6,852,968	69.0
9-10	0.000108	99,265	11	99,260	6,753,697	68.0
10-11	0.000104	99,254	10	99,249	6,654,437	67.0
11-12	0.000115	99,244	11	99,238	6,555,188	66.1
12-13	0.000147	99,233	15	99,225	6,455,950	65.1
13-14	0.000205	99,218	20	99,208	6,356,724	64.1
14-15	0.000284	99,198	28	99,184	6,257,516	63.1
15-16	0.000367	99,170	36	99,152	6,158,332	62.1
16-17	0.000454	99,133	45	99,111	6,059,181	61.1
17-18	0.000564	99,088	56	99,060	5,960,070	60.1
18-19	0.000696	99,033	69	98,998	5,861,009	59.2
19-20	0.000839	98,964	83	98,922	5,762,011	58.2
20-21	0.000987	98,881	98	98,832	5,663,089	57.3
21-22	0.001120	98,783	111	98,728	5,564,258	56.3
22-23	0.001220	98,672	120	98,612	5,465,530	55.4
23-24	0.001280	98,552	126	98,489	5,366,918	54.5
24-25	0.001311	98,426	129	98,361	5,268,429	53.5
25-26	0.001333	98,297	131	98,231	5,170,068	52.6
26-27	0.001361	98,166	134	98,099	5,071,836	51.7
27-28	0.001393	98,032	137	97,964	4,973,738	50.7
28-29	0.001434	97,895	140	97,825	4,875,774	49.8
29-30	0.001480	97,755	145	97,683	4,777,948	48.9
30-31	0.001531	97,610	149	97,536	4,680,266	47.9
31-32	0.001579	97,461	154	97,384	4,582,730	47.0
32-33	0.001618	97,307	157	97,228	4,485,346	46.1
33-34	0.001646	97,150	160	97,070	4,388,117	45.2
34-35	0.001669	96,990	162	96,909	4,291,048	44.2
35-36	0.001702	96,828	165	96,745	4,194,139	43.3
36-37	0.001757	96,663	170	96,578	4,097,393	42.4
37-38	0.001835	96,493	177	96,405	4,000,815	41.5
38-39	0.001936	96,316	186	96,223	3,904,410	40.5
39-40	0.002055	96,130	198	96,031	3,808,188	39.6
40-41	0.002195	95,932	211	95,827	3,712,157	38.7
41-42	0.002352	95,722	225	95,609	3,616,330	37.8
42-43	0.002526	95,496	241	95,376	3,520,721	36.9
43-44	0.002723	95,255	259	95,126	3,425,345	36.0
44-45	0.002952	94,996	280	94,856	3,330,219	35.1
45-46	0.003201	94,715	303	94,564	3,235,364	34.2
46-47	0.003485	94,412	329	94,248	3,140,800	33.3
47-48	0.003836	94,083	361	93,903	3,046,552	32.4
48-49	0.004253	93,722	399	93,523	2,952,649	31.5
49-50	0.004706	93,324	439	93,104	2,859,126	30.6
50-51	0.005157	92,885	479	92,645	2,766,022	29.8
51-52	0.005604	92,406	518	92,147	2,673,377	28.9
52-53	0.006075	91,888	558	91,609	2,581,230	28.1
53-54	0.006587	91,330	602	91,029	2,489,622	27.3
54-55	0.007145	90,728	648	90,404	2,398,593	26.4
55-56	0.007744	90,080	698	89,731	2,308,189	25.6
56-57	0.008361	89,382	747	89,008	2,218,458	24.8
57-58	0.008987	88,635	797	88,237	2,129,450	24.0
58-59	0.009615	87,838	845	87,416	2,041,213	23.2
59-60	0.010259	86,994	892	86,548	1,953,797	22.5
60-61	0.010952	86,101	943	85,630	1,867,250	21.7

See footnotes at end of table.

Table 14. Life table for non-Hispanic white males: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table14.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
61–62	0.011712	85,158	997	84,660	1,781,620	20.9
62–63	0.012520	84,161	1,054	83,634	1,696,960	20.2
63–64	0.013372	83,107	1,111	82,552	1,613,326	19.4
64–65	0.014275	81,996	1,170	81,411	1,530,774	18.7
65–66	0.015239	80,825	1,232	80,210	1,449,364	17.9
66–67	0.016310	79,594	1,298	78,945	1,369,154	17.2
67–68	0.017528	78,296	1,372	77,609	1,290,210	16.5
68–69	0.018953	76,923	1,458	76,194	1,212,600	15.8
69–70	0.020625	75,465	1,556	74,687	1,136,406	15.1
70–71	0.022553	73,909	1,667	73,075	1,061,719	14.4
71–72	0.024745	72,242	1,788	71,348	988,644	13.7
72–73	0.027132	70,454	1,912	69,499	917,296	13.0
73–74	0.029732	68,543	2,038	67,524	847,797	12.4
74–75	0.032544	66,505	2,164	65,423	780,273	11.7
75–76	0.035431	64,341	2,280	63,201	714,851	11.1
76–77	0.038945	62,061	2,417	60,852	651,650	10.5
77–78	0.043159	59,644	2,574	58,357	590,798	9.9
78–79	0.047837	57,070	2,730	55,705	532,441	9.3
79–80	0.052897	54,340	2,874	52,902	476,736	8.8
80–81	0.058657	51,465	3,019	49,956	423,834	8.2
81–82	0.065083	48,446	3,153	46,870	373,878	7.7
82–83	0.071940	45,293	3,258	43,664	327,008	7.2
83–84	0.079641	42,035	3,348	40,361	283,344	6.7
84–85	0.088744	38,687	3,433	36,971	242,982	6.3
85–86	0.098594	35,254	3,476	33,516	206,012	5.8
86–87	0.110205	31,778	3,502	30,027	172,496	5.4
87–88	0.122888	28,276	3,475	26,539	142,468	5.0
88–89	0.136672	24,801	3,390	23,106	115,930	4.7
89–90	0.151571	21,412	3,245	19,789	92,823	4.3
90–91	0.167581	18,166	3,044	16,644	73,034	4.0
91–92	0.184676	15,122	2,793	13,726	56,390	3.7
92–93	0.202806	12,329	2,500	11,079	42,664	3.5
93–94	0.221896	9,829	2,181	8,738	31,585	3.2
94–95	0.241846	7,648	1,850	6,723	22,847	3.0
95–96	0.262532	5,798	1,522	5,037	16,124	2.8
96–97	0.283804	4,276	1,214	3,669	11,087	2.6
97–98	0.305497	3,062	936	2,595	7,418	2.4
98–99	0.327431	2,127	696	1,779	4,823	2.3
99–100	0.349416	1,430	500	1,181	3,044	2.1
100 and over	1.000000	931	931	1,864	1,864	2.0

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates. Updated classification ratios were applied; see Technical Notes.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 15. Life table for non-Hispanic white females: United States, 2013Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table15.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.004455	100,000	445	99,606	8,116,575	81.2
1-2	0.000327	99,555	33	99,538	8,016,968	80.5
2-3	0.000167	99,522	17	99,514	7,917,430	79.6
3-4	0.000120	99,505	12	99,499	7,817,916	78.6
4-5	0.000101	99,493	10	99,488	7,718,417	77.6
5-6	0.000099	99,483	10	99,478	7,618,929	76.6
6-7	0.000091	99,474	9	99,469	7,519,450	75.6
7-8	0.000084	99,465	8	99,460	7,419,981	74.6
8-9	0.000078	99,456	8	99,452	7,320,521	73.6
9-10	0.000073	99,448	7	99,445	7,221,069	72.6
10-11	0.000071	99,441	7	99,438	7,121,624	71.6
11-12	0.000075	99,434	7	99,430	7,022,186	70.6
12-13	0.000090	99,427	9	99,422	6,922,756	69.6
13-14	0.000117	99,418	12	99,412	6,823,334	68.6
14-15	0.000154	99,406	15	99,398	6,723,922	67.6
15-16	0.000194	99,391	19	99,381	6,624,524	66.7
16-17	0.000235	99,371	23	99,360	6,525,143	65.7
17-18	0.000277	99,348	28	99,334	6,425,783	64.7
18-19	0.000318	99,321	32	99,305	6,326,449	63.7
19-20	0.000358	99,289	35	99,271	6,227,144	62.7
20-21	0.000397	99,253	39	99,234	6,127,873	61.7
21-22	0.000435	99,214	43	99,192	6,028,639	60.8
22-23	0.000468	99,171	46	99,148	5,929,447	59.8
23-24	0.000495	99,124	49	99,100	5,830,299	58.8
24-25	0.000519	99,075	51	99,049	5,731,200	57.8
25-26	0.000544	99,024	54	98,997	5,632,150	56.9
26-27	0.000571	98,970	57	98,942	5,533,153	55.9
27-28	0.000601	98,913	59	98,884	5,434,212	54.9
28-29	0.000635	98,854	63	98,823	5,335,328	54.0
29-30	0.000671	98,791	66	98,758	5,236,505	53.0
30-31	0.000712	98,725	70	98,690	5,137,747	52.0
31-32	0.000755	98,655	74	98,617	5,039,058	51.1
32-33	0.000799	98,580	79	98,541	4,940,440	50.1
33-34	0.000845	98,501	83	98,460	4,841,900	49.2
34-35	0.000895	98,418	88	98,374	4,743,440	48.2
35-36	0.000959	98,330	94	98,283	4,645,066	47.2
36-37	0.001035	98,236	102	98,185	4,546,783	46.3
37-38	0.001117	98,134	110	98,079	4,448,598	45.3
38-39	0.001198	98,024	117	97,966	4,350,519	44.4
39-40	0.001278	97,907	125	97,844	4,252,553	43.4
40-41	0.001364	97,782	133	97,715	4,154,708	42.5
41-42	0.001464	97,649	143	97,577	4,056,993	41.5
42-43	0.001581	97,506	154	97,429	3,959,416	40.6
43-44	0.001722	97,351	168	97,268	3,861,987	39.7
44-45	0.001888	97,184	184	97,092	3,764,720	38.7
45-46	0.002066	97,000	200	96,900	3,667,628	37.8
46-47	0.002259	96,800	219	96,691	3,570,728	36.9
47-48	0.002481	96,581	240	96,461	3,474,037	36.0
48-49	0.002729	96,342	263	96,210	3,377,576	35.1
49-50	0.002988	96,079	287	95,935	3,281,365	34.2
50-51	0.003247	95,792	311	95,636	3,185,430	33.3
51-52	0.003503	95,481	334	95,313	3,089,794	32.4
52-53	0.003763	95,146	358	94,967	2,994,481	31.5
53-54	0.004036	94,788	383	94,597	2,899,514	30.6
54-55	0.004329	94,405	409	94,201	2,804,917	29.7
55-56	0.004648	93,997	437	93,778	2,710,716	28.8
56-57	0.004987	93,560	467	93,327	2,616,938	28.0
57-58	0.005334	93,093	497	92,845	2,523,611	27.1
58-59	0.005689	92,597	527	92,333	2,430,766	26.3
59-60	0.006064	92,070	558	91,791	2,338,433	25.4
60-61	0.006468	91,512	592	91,216	2,246,643	24.6

See footnotes at end of table.

Table 15. Life table for non-Hispanic white females: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table15.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
61–62	0.006931	90,920	630	90,605	2,155,427	23.7
62–63	0.007484	90,289	676	89,952	2,064,822	22.9
63–64	0.008148	89,614	730	89,249	1,974,871	22.0
64–65	0.008914	88,884	792	88,487	1,885,622	21.2
65–66	0.009772	88,091	861	87,661	1,797,135	20.4
66–67	0.010697	87,230	933	86,764	1,709,474	19.6
67–68	0.011695	86,297	1,009	85,793	1,622,710	18.8
68–69	0.012788	85,288	1,091	84,743	1,536,917	18.0
69–70	0.014009	84,197	1,179	83,608	1,452,174	17.2
70–71	0.015395	83,018	1,278	82,379	1,368,566	16.5
71–72	0.017005	81,740	1,390	81,045	1,286,187	15.7
72–73	0.018804	80,350	1,511	79,595	1,205,143	15.0
73–74	0.020649	78,839	1,628	78,025	1,125,548	14.3
74–75	0.022720	77,211	1,754	76,334	1,047,523	13.6
75–76	0.025030	75,457	1,889	74,513	971,189	12.9
76–77	0.027775	73,568	2,043	72,547	896,676	12.2
77–78	0.031008	71,525	2,218	70,416	824,129	11.5
78–79	0.034637	69,307	2,401	68,107	753,714	10.9
79–80	0.038654	66,906	2,586	65,613	685,607	10.2
80–81	0.042892	64,320	2,759	62,941	619,993	9.6
81–82	0.047472	61,561	2,922	60,100	557,053	9.0
82–83	0.053103	58,639	3,114	57,082	496,952	8.5
83–84	0.059487	55,525	3,303	53,874	439,870	7.9
84–85	0.067048	52,222	3,501	50,471	385,997	7.4
85–86	0.074626	48,721	3,636	46,903	335,526	6.9
86–87	0.084141	45,085	3,793	43,188	288,623	6.4
87–88	0.094674	41,291	3,909	39,337	245,435	5.9
88–89	0.106285	37,382	3,973	35,396	206,098	5.5
89–90	0.119025	33,409	3,976	31,421	170,702	5.1
90–91	0.132928	29,432	3,912	27,476	139,282	4.7
91–92	0.148017	25,520	3,777	23,631	111,805	4.4
92–93	0.164292	21,743	3,572	19,957	88,174	4.1
93–94	0.181729	18,171	3,302	16,519	68,217	3.8
94–95	0.200279	14,868	2,978	13,379	51,698	3.5
95–96	0.219864	11,891	2,614	10,583	38,319	3.2
96–97	0.240376	9,276	2,230	8,161	27,735	3.0
97–98	0.261682	7,046	1,844	6,125	19,574	2.8
98–99	0.283620	5,203	1,476	4,465	13,449	2.6
99–100	0.306007	3,727	1,140	3,157	8,984	2.4
100 and over	1.000000	2,587	2,587	5,828	5,828	2.3

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates. Updated classification ratios were applied; see Technical Notes.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 16. Life table for the non-Hispanic black population: United States, 2013Spreadsheet version available from: http://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table16.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.011114	100,000	1,111	99,025	7,514,331	75.1
1-2	0.000678	98,889	67	98,855	7,415,306	75.0
2-3	0.000399	98,822	39	98,802	7,316,450	74.0
3-4	0.000283	98,782	28	98,768	7,217,649	73.1
4-5	0.000261	98,754	26	98,741	7,118,880	72.1
5-6	0.000235	98,728	23	98,717	7,020,139	71.1
6-7	0.000211	98,705	21	98,695	6,921,422	70.1
7-8	0.000187	98,684	19	98,675	6,822,728	69.1
8-9	0.000163	98,666	16	98,658	6,724,052	68.1
9-10	0.000138	98,650	14	98,643	6,625,395	67.2
10-11	0.000120	98,636	12	98,630	6,526,752	66.2
11-12	0.000120	98,624	12	98,619	6,428,121	65.2
12-13	0.000152	98,613	15	98,605	6,329,503	64.2
13-14	0.000224	98,598	22	98,587	6,230,897	63.2
14-15	0.000325	98,576	32	98,559	6,132,311	62.2
15-16	0.000432	98,543	43	98,522	6,033,751	61.2
16-17	0.000539	98,501	53	98,474	5,935,229	60.3
17-18	0.000661	98,448	65	98,415	5,836,755	59.3
18-19	0.000793	98,383	78	98,344	5,738,340	58.3
19-20	0.000924	98,305	91	98,259	5,639,996	57.4
20-21	0.001055	98,214	104	98,162	5,541,737	56.4
21-22	0.001172	98,110	115	98,053	5,443,574	55.5
22-23	0.001259	97,995	123	97,934	5,345,522	54.5
23-24	0.001315	97,872	129	97,808	5,247,588	53.6
24-25	0.001349	97,743	132	97,677	5,149,780	52.7
25-26	0.001380	97,611	135	97,544	5,052,103	51.8
26-27	0.001419	97,477	138	97,408	4,954,559	50.8
27-28	0.001462	97,338	142	97,267	4,857,152	49.9
28-29	0.001513	97,196	147	97,123	4,759,884	49.0
29-30	0.001567	97,049	152	96,973	4,662,762	48.0
30-31	0.001622	96,897	157	96,818	4,565,789	47.1
31-32	0.001678	96,740	162	96,659	4,468,970	46.2
32-33	0.001739	96,577	168	96,493	4,372,312	45.3
33-34	0.001810	96,409	174	96,322	4,275,818	44.4
34-35	0.001892	96,235	182	96,144	4,179,496	43.4
35-36	0.001995	96,053	192	95,957	4,083,352	42.5
36-37	0.002112	95,861	202	95,760	3,987,395	41.6
37-38	0.002234	95,659	214	95,552	3,891,635	40.7
38-39	0.002352	95,445	224	95,333	3,796,083	39.8
39-40	0.002469	95,221	235	95,103	3,700,750	38.9
40-41	0.002596	94,985	247	94,862	3,605,647	38.0
41-42	0.002750	94,739	261	94,609	3,510,785	37.1
42-43	0.002939	94,478	278	94,339	3,416,176	36.2
43-44	0.003176	94,201	299	94,051	3,321,837	35.3
44-45	0.003461	93,901	325	93,739	3,227,786	34.4
45-46	0.003776	93,576	353	93,400	3,134,047	33.5
46-47	0.004118	93,223	384	93,031	3,040,647	32.6
47-48	0.004508	92,839	419	92,630	2,947,616	31.7
48-49	0.004943	92,421	457	92,192	2,854,986	30.9
49-50	0.005411	91,964	498	91,715	2,762,794	30.0
50-51	0.005882	91,466	538	91,197	2,671,079	29.2
51-52	0.006373	90,928	579	90,638	2,579,882	28.4
52-53	0.006936	90,349	627	90,035	2,489,243	27.6
53-54	0.007602	89,722	682	89,381	2,399,208	26.7
54-55	0.008363	89,040	745	88,668	2,309,827	25.9
55-56	0.009182	88,295	811	87,890	2,221,159	25.2
56-57	0.010018	87,485	876	87,046	2,133,269	24.4
57-58	0.010882	86,608	942	86,137	2,046,223	23.6
58-59	0.011762	85,666	1,008	85,162	1,960,086	22.9
59-60	0.012669	84,658	1,072	84,122	1,874,924	22.1
60-61	0.013672	83,586	1,143	83,014	1,790,802	21.4

See footnotes at end of table.

Table 16. Life table for the non-Hispanic black population: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table16.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
61–62	0.014746	82,443	1,216	81,835	1,707,788	20.7
62–63	0.015775	81,227	1,281	80,586	1,625,953	20.0
63–64	0.016699	79,946	1,335	79,278	1,545,366	19.3
64–65	0.017560	78,611	1,380	77,921	1,466,088	18.6
65–66	0.018450	77,230	1,425	76,518	1,388,167	18.0
66–67	0.019480	75,805	1,477	75,067	1,311,650	17.3
67–68	0.020730	74,329	1,541	73,558	1,236,583	16.6
68–69	0.022264	72,788	1,621	71,978	1,163,024	16.0
69–70	0.024012	71,167	1,709	70,313	1,091,047	15.3
70–71	0.025958	69,458	1,803	68,557	1,020,734	14.7
71–72	0.028050	67,655	1,898	66,707	952,177	14.1
72–73	0.030231	65,758	1,988	64,764	885,470	13.5
73–74	0.032557	63,770	2,076	62,732	820,706	12.9
74–75	0.035056	61,694	2,163	60,612	757,975	12.3
75–76	0.037581	59,531	2,237	58,412	697,362	11.7
76–77	0.040678	57,294	2,331	56,128	638,950	11.2
77–78	0.044082	54,963	2,423	53,752	582,822	10.6
78–79	0.047792	52,540	2,511	51,285	529,070	10.1
79–80	0.052308	50,029	2,617	48,721	477,785	9.6
80–81	0.057262	47,412	2,715	46,055	429,065	9.0
81–82	0.061827	44,697	2,763	43,316	383,010	8.6
82–83	0.067127	41,934	2,815	40,526	339,694	8.1
83–84	0.073606	39,119	2,879	37,679	299,168	7.6
84–85	0.082214	36,240	2,979	34,750	261,489	7.2
85–86	0.089402	33,260	2,974	31,773	226,739	6.8
86–87	0.097114	30,287	2,941	28,816	194,965	6.4
87–88	0.105370	27,345	2,881	25,905	166,149	6.1
88–89	0.114187	24,464	2,793	23,067	140,245	5.7
89–90	0.123579	21,671	2,678	20,332	117,177	5.4
90–91	0.133557	18,993	2,537	17,724	96,846	5.1
91–92	0.144127	16,456	2,372	15,270	79,122	4.8
92–93	0.155290	14,084	2,187	12,991	63,852	4.5
93–94	0.167040	11,897	1,987	10,903	50,861	4.3
94–95	0.179369	9,910	1,778	9,021	39,958	4.0
95–96	0.192257	8,132	1,563	7,351	30,937	3.8
96–97	0.205680	6,569	1,351	5,893	23,586	3.6
97–98	0.219606	5,218	1,146	4,645	17,693	3.4
98–99	0.233997	4,072	953	3,595	13,048	3.2
99–100	0.248806	3,119	776	2,731	9,453	3.0
100 and over	1.000000	2,343	2,343	6,722	6,722	2.9

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates. Updated classification ratios were applied; see Technical Notes.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 17. Life table for non-Hispanic black males: United States, 2013Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table17.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.011970	100,000	1,197	98,951	7,194,806	71.9
1-2	0.000682	98,803	67	98,769	7,095,855	71.8
2-3	0.000417	98,736	41	98,715	6,997,085	70.9
3-4	0.000277	98,694	27	98,681	6,898,370	69.9
4-5	0.000249	98,667	25	98,655	6,799,689	68.9
5-6	0.000236	98,642	23	98,631	6,701,035	67.9
6-7	0.000216	98,619	21	98,609	6,602,404	66.9
7-8	0.000192	98,598	19	98,588	6,503,795	66.0
8-9	0.000159	98,579	16	98,571	6,405,207	65.0
9-10	0.000119	98,563	12	98,557	6,306,636	64.0
10-11	0.000087	98,552	9	98,547	6,208,078	63.0
11-12	0.000086	98,543	8	98,539	6,109,531	62.0
12-13	0.000140	98,535	14	98,528	6,010,992	61.0
13-14	0.000265	98,521	26	98,508	5,912,465	60.0
14-15	0.000442	98,495	44	98,473	5,813,957	59.0
15-16	0.000627	98,451	62	98,420	5,715,484	58.1
16-17	0.000808	98,389	80	98,350	5,617,064	57.1
17-18	0.001007	98,310	99	98,260	5,518,714	56.1
18-19	0.001217	98,211	119	98,151	5,420,454	55.2
19-20	0.001419	98,091	139	98,022	5,322,303	54.3
20-21	0.001621	97,952	159	97,873	5,224,281	53.3
21-22	0.001800	97,793	176	97,705	5,126,409	52.4
22-23	0.001928	97,617	188	97,523	5,028,703	51.5
23-24	0.002002	97,429	195	97,332	4,931,180	50.6
24-25	0.002036	97,234	198	97,135	4,833,849	49.7
25-26	0.002058	97,036	200	96,936	4,736,714	48.8
26-27	0.002090	96,836	202	96,735	4,639,778	47.9
27-28	0.002127	96,634	206	96,531	4,543,042	47.0
28-29	0.002179	96,428	210	96,323	4,446,511	46.1
29-30	0.002239	96,218	215	96,111	4,350,188	45.2
30-31	0.002297	96,003	221	95,893	4,254,077	44.3
31-32	0.002354	95,782	225	95,670	4,158,185	43.4
32-33	0.002416	95,557	231	95,441	4,062,515	42.5
33-34	0.002489	95,326	237	95,207	3,967,074	41.6
34-35	0.002576	95,089	245	94,966	3,871,866	40.7
35-36	0.002687	94,844	255	94,716	3,776,900	39.8
36-37	0.002814	94,589	266	94,456	3,682,183	38.9
37-38	0.002940	94,323	277	94,184	3,587,727	38.0
38-39	0.003050	94,046	287	93,902	3,493,543	37.1
39-40	0.003155	93,759	296	93,611	3,399,641	36.3
40-41	0.003270	93,463	306	93,310	3,306,030	35.4
41-42	0.003422	93,157	319	92,998	3,212,720	34.5
42-43	0.003626	92,838	337	92,670	3,119,723	33.6
43-44	0.003901	92,502	361	92,321	3,027,052	32.7
44-45	0.004243	92,141	391	91,945	2,934,731	31.9
45-46	0.004629	91,750	425	91,538	2,842,786	31.0
46-47	0.005049	91,325	461	91,095	2,751,248	30.1
47-48	0.005513	90,864	501	90,614	2,660,153	29.3
48-49	0.006014	90,363	543	90,092	2,569,539	28.4
49-50	0.006547	89,820	588	89,526	2,479,448	27.6
50-51	0.007077	89,232	632	88,916	2,389,922	26.8
51-52	0.007649	88,600	678	88,261	2,301,006	26.0
52-53	0.008351	87,923	734	87,555	2,212,745	25.2
53-54	0.009239	87,188	806	86,786	2,125,189	24.4
54-55	0.010290	86,383	889	85,938	2,038,404	23.6
55-56	0.011434	85,494	978	85,005	1,952,465	22.8
56-57	0.012597	84,516	1,065	83,984	1,867,460	22.1
57-58	0.013794	83,452	1,151	82,876	1,783,476	21.4
58-59	0.015004	82,301	1,235	81,683	1,700,600	20.7
59-60	0.016242	81,066	1,317	80,407	1,618,917	20.0
60-61	0.017626	79,749	1,406	79,046	1,538,510	19.3

See footnotes at end of table.

Table 17. Life table for non-Hispanic black males: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table17.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
61–62	0.019116	78,343	1,498	77,595	1,459,463	18.6
62–63	0.020515	76,846	1,577	76,057	1,381,869	18.0
63–64	0.021711	75,269	1,634	74,452	1,305,811	17.3
64–65	0.022752	73,635	1,675	72,797	1,231,359	16.7
65–66	0.023781	71,960	1,711	71,104	1,158,562	16.1
66–67	0.024980	70,249	1,755	69,371	1,087,458	15.5
67–68	0.026459	68,494	1,812	67,588	1,018,087	14.9
68–69	0.028343	66,681	1,890	65,736	950,499	14.3
69–70	0.030543	64,791	1,979	63,802	884,763	13.7
70–71	0.032969	62,813	2,071	61,777	820,961	13.1
71–72	0.035613	60,742	2,163	59,660	759,183	12.5
72–73	0.038414	58,579	2,250	57,453	699,523	11.9
73–74	0.041345	56,328	2,329	55,164	642,070	11.4
74–75	0.044290	53,999	2,392	52,804	586,906	10.9
75–76	0.047463	51,608	2,449	50,383	534,102	10.3
76–77	0.051698	49,158	2,541	47,888	483,719	9.8
77–78	0.055793	46,617	2,601	45,317	435,831	9.3
78–79	0.060010	44,016	2,641	42,695	390,515	8.9
79–80	0.065180	41,375	2,697	40,026	347,819	8.4
80–81	0.070315	38,678	2,720	37,318	307,793	8.0
81–82	0.075707	35,958	2,722	34,597	270,475	7.5
82–83	0.082185	33,236	2,731	31,870	235,878	7.1
83–84	0.090487	30,504	2,760	29,124	204,008	6.7
84–85	0.098605	27,744	2,736	26,376	174,883	6.3
85–86	0.107316	25,009	2,684	23,667	148,507	5.9
86–87	0.116638	22,325	2,604	21,023	124,840	5.6
87–88	0.126587	19,721	2,496	18,473	103,818	5.3
88–89	0.137173	17,224	2,363	16,043	85,345	5.0
89–90	0.148401	14,862	2,205	13,759	69,302	4.7
90–91	0.160270	12,656	2,028	11,642	55,543	4.4
91–92	0.172772	10,628	1,836	9,710	43,901	4.1
92–93	0.185890	8,792	1,634	7,974	34,191	3.9
93–94	0.199603	7,157	1,429	6,443	26,217	3.7
94–95	0.213877	5,729	1,225	5,116	19,774	3.5
95–96	0.228671	4,503	1,030	3,989	14,658	3.3
96–97	0.243938	3,474	847	3,050	10,669	3.1
97–98	0.259620	2,626	682	2,285	7,619	2.9
98–99	0.275653	1,944	536	1,676	5,334	2.7
99–100	0.291966	1,408	411	1,203	3,658	2.6
100 and over	1.000000	997	997	2,455	2,455	2.5

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates. Updated classification ratios were applied; see Technical Notes.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 18. Life table for non-Hispanic black females: United States, 2013Spreadsheet version available from: http://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table18.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.010227	100,000	1,023	99,102	7,808,896	78.1
1-2	0.000591	98,977	59	98,948	7,709,794	77.9
2-3	0.000331	98,919	33	98,902	7,610,846	76.9
3-4	0.000256	98,886	25	98,873	7,511,944	76.0
4-5	0.000242	98,861	24	98,849	7,413,070	75.0
5-6	0.000208	98,837	21	98,827	7,314,221	74.0
6-7	0.000183	98,816	18	98,807	7,215,395	73.0
7-8	0.000163	98,798	16	98,790	7,116,587	72.0
8-9	0.000146	98,782	14	98,775	7,017,797	71.0
9-10	0.000134	98,768	13	98,761	6,919,022	70.1
10-11	0.000127	98,755	13	98,748	6,820,261	69.1
11-12	0.000128	98,742	13	98,736	6,721,513	68.1
12-13	0.000138	98,729	14	98,723	6,622,777	67.1
13-14	0.000158	98,716	16	98,708	6,524,055	66.1
14-15	0.000188	98,700	19	98,691	6,425,347	65.1
15-16	0.000221	98,682	22	98,671	6,326,656	64.1
16-17	0.000258	98,660	25	98,647	6,227,985	63.1
17-18	0.000304	98,634	30	98,619	6,129,338	62.1
18-19	0.000358	98,604	35	98,587	6,030,719	61.2
19-20	0.000416	98,569	41	98,548	5,932,133	60.2
20-21	0.000475	98,528	47	98,504	5,833,584	59.2
21-22	0.000530	98,481	52	98,455	5,735,080	58.2
22-23	0.000578	98,429	57	98,400	5,636,625	57.3
23-24	0.000620	98,372	61	98,342	5,538,224	56.3
24-25	0.000662	98,311	65	98,278	5,439,883	55.3
25-26	0.000709	98,246	70	98,211	5,341,604	54.4
26-27	0.000764	98,176	75	98,139	5,243,393	53.4
27-28	0.000823	98,101	81	98,061	5,145,254	52.4
28-29	0.000881	98,020	86	97,977	5,047,194	51.5
29-30	0.000936	97,934	92	97,888	4,949,216	50.5
30-31	0.000993	97,842	97	97,794	4,851,328	49.6
31-32	0.001055	97,745	103	97,694	4,753,534	48.6
32-33	0.001121	97,642	109	97,587	4,655,841	47.7
33-34	0.001192	97,533	116	97,475	4,558,253	46.7
34-35	0.001275	97,416	124	97,354	4,460,779	45.8
35-36	0.001372	97,292	134	97,225	4,363,424	44.8
36-37	0.001484	97,159	144	97,087	4,266,199	43.9
37-38	0.001606	97,014	156	96,937	4,169,112	43.0
38-39	0.001731	96,859	168	96,775	4,072,176	42.0
39-40	0.001860	96,691	180	96,601	3,975,401	41.1
40-41	0.001998	96,511	193	96,415	3,878,800	40.2
41-42	0.002153	96,318	207	96,215	3,782,385	39.3
42-43	0.002328	96,111	224	95,999	3,686,170	38.4
43-44	0.002531	95,887	243	95,766	3,590,171	37.4
44-45	0.002766	95,644	265	95,512	3,494,406	36.5
45-46	0.003017	95,380	288	95,236	3,398,893	35.6
46-47	0.003291	95,092	313	94,936	3,303,657	34.7
47-48	0.003615	94,779	343	94,608	3,208,722	33.9
48-49	0.003992	94,437	377	94,248	3,114,114	33.0
49-50	0.004404	94,060	414	93,852	3,019,866	32.1
50-51	0.004824	93,645	452	93,419	2,926,013	31.2
51-52	0.005247	93,194	489	92,949	2,832,594	30.4
52-53	0.005690	92,705	527	92,441	2,739,645	29.6
53-54	0.006165	92,177	568	91,893	2,647,204	28.7
54-55	0.006676	91,609	612	91,303	2,555,311	27.9
55-56	0.007217	90,997	657	90,669	2,464,008	27.1
56-57	0.007779	90,340	703	89,989	2,373,340	26.3
57-58	0.008369	89,638	750	89,263	2,283,351	25.5
58-59	0.008990	88,887	799	88,488	2,194,088	24.7
59-60	0.009645	88,088	850	87,664	2,105,600	23.9
60-61	0.010368	87,239	904	86,787	2,017,937	23.1

See footnotes at end of table.

Table 18. Life table for non-Hispanic black females: United States, 2013—Con.Spreadsheet version available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/66_03/Table18.xlsx.

Age (years)	Probability of dying between ages x and $x + 1$	Number surviving to age x	Number dying between ages x and $x + 1$	Person-years lived between ages x and $x + 1$	Total number of person-years lived above age x	Expectation of life at age x
	q_x	l_x	d_x	L_x	T_x	e_x
61–62	0.011141	86,334	962	85,853	1,931,150	22.4
62–63	0.011910	85,372	1,017	84,864	1,845,297	21.6
63–64	0.012651	84,356	1,067	83,822	1,760,433	20.9
64–65	0.013396	83,288	1,116	82,731	1,676,611	20.1
65–66	0.014206	82,173	1,167	81,589	1,593,880	19.4
66–67	0.015134	81,005	1,226	80,392	1,512,291	18.7
67–68	0.016241	79,779	1,296	79,132	1,431,899	17.9
68–69	0.017555	78,484	1,378	77,795	1,352,767	17.2
69–70	0.019021	77,106	1,467	76,373	1,274,972	16.5
70–71	0.020672	75,639	1,564	74,858	1,198,599	15.8
71–72	0.022431	74,076	1,662	73,245	1,123,742	15.2
72–73	0.024258	72,414	1,757	71,536	1,050,497	14.5
73–74	0.026249	70,658	1,855	69,730	978,961	13.9
74–75	0.028538	68,803	1,963	67,821	909,231	13.2
75–76	0.030721	66,839	2,053	65,813	841,409	12.6
76–77	0.033169	64,786	2,149	63,712	775,597	12.0
77–78	0.036307	62,637	2,274	61,500	711,885	11.4
78–79	0.039878	60,363	2,407	59,159	650,385	10.8
79–80	0.044226	57,956	2,563	56,674	591,225	10.2
80–81	0.049342	55,393	2,733	54,026	534,551	9.7
81–82	0.053719	52,660	2,829	51,245	480,525	9.1
82–83	0.058698	49,831	2,925	48,368	429,280	8.6
83–84	0.064718	46,906	3,036	45,388	380,911	8.1
84–85	0.072479	43,870	3,180	42,280	335,523	7.6
85–86	0.079492	40,690	3,235	39,073	293,243	7.2
86–87	0.087085	37,456	3,262	35,825	254,170	6.8
87–88	0.095284	34,194	3,258	32,565	218,345	6.4
88–89	0.104117	30,936	3,221	29,325	185,780	6.0
89–90	0.113606	27,715	3,149	26,141	156,455	5.6
90–91	0.123769	24,566	3,041	23,046	130,314	5.3
91–92	0.134621	21,526	2,898	20,077	107,268	5.0
92–93	0.146167	18,628	2,723	17,267	87,191	4.7
93–94	0.158409	15,905	2,520	14,645	69,924	4.4
94–95	0.171339	13,386	2,293	12,239	55,279	4.1
95–96	0.184941	11,092	2,051	10,066	43,040	3.9
96–97	0.199187	9,041	1,801	8,140	32,974	3.6
97–98	0.214044	7,240	1,550	6,465	24,833	3.4
98–99	0.229465	5,690	1,306	5,037	18,368	3.2
99–100	0.245394	4,385	1,076	3,847	13,331	3.0
100 and over	1.000000	3,309	3,309	9,484	9,484	2.9

NOTE: This life table is based on death rates that have been adjusted for race and ethnicity misclassification on death certificates. Updated classification ratios were applied; see Technical Notes.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 19. Estimated life expectancy at birth, in years, by race, Hispanic origin, and sex: Death-registration states, 1900–1928, and United States, 1929–2013

[For selected years, life table values shown are estimates; see Technical Notes. Beginning in 1970, excludes deaths of nonresidents of the United States; see Technical Notes]

Area and year	All races and origins			White			Black ¹			Hispanic ²			Non-Hispanic white ²			Non-Hispanic black ²		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
United States ³																		
2013 ⁴	78.8	76.4	81.2	79.0	76.7	81.4	75.5	72.3	78.4	81.9	79.2	84.2	78.8	76.5	81.2	75.1	71.9	78.1
2012 ⁴	78.8	76.4	81.2	79.1	76.7	81.4	75.5	72.3	78.4	81.9	79.3	84.3	78.9	76.5	81.2	75.1	71.9	78.1
2011 ⁴	78.7	76.3	81.1	79.0	76.6	81.3	75.3	72.2	78.2	81.8	79.2	84.2	78.7	76.4	81.1	75.0	71.8	77.8
2010 ⁴	78.7	76.2	81.0	78.9	76.5	81.3	75.1	71.8	78.0	81.7	78.8	84.3	78.8	76.4	81.1	74.7	71.5	77.7
2009 ^{4,5}	78.5	76.0	80.9	78.8	76.4	81.2	74.7	71.4	77.7	81.1	78.4	83.5	78.7	76.3	81.0	74.4	71.0	77.4
2008 ^{4,5}	78.2	75.6	80.6	78.5	76.1	80.9	74.3	70.9	77.3	80.8	78.0	83.3	78.4	76.0	80.7	73.9	70.5	77.0
2007 ^{4,5}	78.1	75.5	80.6	78.5	76.0	80.9	73.8	70.3	77.0	80.7	77.8	83.2	78.4	75.9	80.8	73.5	69.9	76.7
2006 ^{4,5}	77.8	75.2	80.3	78.3	75.8	80.7	73.4	69.9	76.7	80.3	77.5	82.9	78.2	75.7	80.6	73.1	69.5	76.4
2005 ^{4,5}	77.6	75.0	80.1	78.0	75.5	80.5	73.0	69.5	76.2	---	---	---	---	---	---	---	---	---
2004 ^{4,5}	77.6	75.0	80.1	78.1	75.5	80.5	72.9	69.4	76.1	---	---	---	---	---	---	---	---	---
2003 ^{4,5}	77.2	74.5	79.7	77.7	75.1	80.2	72.4	68.9	75.7	---	---	---	---	---	---	---	---	---
2002 ^{4,5}	77.0	74.4	79.6	77.5	74.9	80.1	72.2	68.7	75.4	---	---	---	---	---	---	---	---	---
2001 ^{4,5}	77.0	74.3	79.5	77.5	74.9	80.0	72.0	68.5	75.3	---	---	---	---	---	---	---	---	---
2000	76.8	74.1	79.3	77.3	74.7	79.9	71.8	68.2	75.1	---	---	---	---	---	---	---	---	---
1999	76.7	73.9	79.4	77.3	74.6	79.9	71.4	67.8	74.7	---	---	---	---	---	---	---	---	---
1998	76.7	73.8	79.5	77.3	74.5	80.0	71.3	67.6	74.8	---	---	---	---	---	---	---	---	---
1997	76.5	73.6	79.4	77.1	74.3	79.9	71.1	67.2	74.7	---	---	---	---	---	---	---	---	---
1996	76.1	73.1	79.1	76.8	73.9	79.7	70.2	66.1	74.2	---	---	---	---	---	---	---	---	---
1995	75.8	72.5	78.9	76.5	73.4	79.6	69.6	65.2	73.9	---	---	---	---	---	---	---	---	---
1994	75.7	72.4	79.0	76.5	73.3	79.6	69.5	64.9	73.9	---	---	---	---	---	---	---	---	---
1993	75.5	72.2	78.8	76.3	73.1	79.5	69.2	64.6	73.7	---	---	---	---	---	---	---	---	---
1992	75.8	72.3	79.1	76.5	73.2	79.8	69.6	65.0	73.9	---	---	---	---	---	---	---	---	---
1991	75.5	72.0	78.9	76.3	72.9	79.6	69.3	64.6	73.8	---	---	---	---	---	---	---	---	---
1990	75.4	71.8	78.8	76.1	72.7	79.4	69.1	64.5	73.6	---	---	---	---	---	---	---	---	---
1989	75.1	71.7	78.5	75.9	72.5	79.2	68.8	64.3	73.3	---	---	---	---	---	---	---	---	---
1988	74.9	71.4	78.3	75.6	72.2	78.9	68.9	64.4	73.2	---	---	---	---	---	---	---	---	---
1987	74.9	71.4	78.3	75.6	72.1	78.9	69.1	64.7	73.4	---	---	---	---	---	---	---	---	---
1986	74.7	71.2	78.2	75.4	71.9	78.8	69.1	64.8	73.4	---	---	---	---	---	---	---	---	---
1985	74.7	71.1	78.2	75.3	71.8	78.7	69.3	65.0	73.4	---	---	---	---	---	---	---	---	---
1984	74.7	71.1	78.2	75.3	71.8	78.7	69.5	65.3	73.6	---	---	---	---	---	---	---	---	---
1983	74.6	71.0	78.1	75.2	71.6	78.7	69.4	65.2	73.5	---	---	---	---	---	---	---	---	---
1982	74.5	70.8	78.1	75.1	71.5	78.7	69.4	65.1	73.6	---	---	---	---	---	---	---	---	---
1981	74.1	70.4	77.8	74.8	71.1	78.4	68.9	64.5	73.2	---	---	---	---	---	---	---	---	---
1980	73.7	70.0	77.4	74.4	70.7	78.1	68.1	63.8	72.5	---	---	---	---	---	---	---	---	---
1979	73.9	70.0	77.8	74.6	70.8	78.4	68.5	64.0	72.9	---	---	---	---	---	---	---	---	---
1978	73.5	69.6	77.3	74.1	70.4	78.0	68.1	63.7	72.4	---	---	---	---	---	---	---	---	---
1977	73.3	69.5	77.2	74.0	70.2	77.9	67.7	63.4	72.0	---	---	---	---	---	---	---	---	---
1976	72.9	69.1	76.8	73.6	69.9	77.5	67.2	62.9	71.6	---	---	---	---	---	---	---	---	---
1975	72.6	68.8	76.6	73.4	69.5	77.3	66.8	62.4	71.3	---	---	---	---	---	---	---	---	---
1974	72.0	68.2	75.9	72.8	69.0	76.7	66.0	61.7	70.3	---	---	---	---	---	---	---	---	---
1973	71.4	67.6	75.3	72.2	68.5	76.1	65.0	60.9	69.3	---	---	---	---	---	---	---	---	---
1972 ⁶	71.2	67.4	75.1	72.0	68.3	75.9	64.7	60.4	69.1	---	---	---	---	---	---	---	---	---
1971	71.1	67.4	75.0	72.0	68.3	75.8	64.6	60.5	68.9	---	---	---	---	---	---	---	---	---
1970	70.8	67.1	74.7	71.7	68.0	75.6	64.1	60.0	68.3	---	---	---	---	---	---	---	---	---
1969	70.5	66.8	74.4	71.4	67.7	75.3	64.5	60.6	68.6	---	---	---	---	---	---	---	---	---
1968	70.2	66.6	74.1	71.1	67.5	75.0	64.1	60.4	67.9	---	---	---	---	---	---	---	---	---
1967	70.5	67.0	74.3	71.4	67.8	75.2	64.9	61.4	68.5	---	---	---	---	---	---	---	---	---
1966	70.2	66.7	73.9	71.1	67.5	74.8	64.2	60.9	67.6	---	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 19. Estimated life expectancy at birth, in years, by race, Hispanic origin, and sex: Death-registration states, 1900–1928, and United States, 1929–2013—Con.

[For selected years, life table values shown are estimates; see Technical Notes. Beginning in 1970, excludes deaths of nonresidents of the United States; see Technical Notes]

Area and year	All races and origins			White			Black ¹			Hispanic ²			Non-Hispanic white ²			Non-Hispanic black ²		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
United States ³ —Con.																		
1965	70.2	66.8	73.8	71.1	67.6	74.8	64.3	61.2	67.6	---	---	---	---	---	---	---	---	---
1964	70.2	66.8	73.7	71.0	67.7	74.7	64.2	61.3	67.3	---	---	---	---	---	---	---	---	---
1963 ⁷	69.9	66.6	73.4	70.8	67.4	74.4	63.7	61.0	66.6	---	---	---	---	---	---	---	---	---
1962 ⁷	70.1	66.9	73.5	70.9	67.7	74.5	64.2	61.6	66.9	---	---	---	---	---	---	---	---	---
1961	70.2	67.1	73.6	71.0	67.8	74.6	64.5	62.0	67.1	---	---	---	---	---	---	---	---	---
1960	69.7	66.6	73.1	70.6	67.4	74.1	63.6	61.1	66.3	---	---	---	---	---	---	---	---	---
1959	69.9	66.8	73.2	70.7	67.5	74.2	63.9	61.3	66.5	---	---	---	---	---	---	---	---	---
1958	69.6	66.6	72.9	70.5	67.4	73.9	63.4	61.0	65.8	---	---	---	---	---	---	---	---	---
1957	69.5	66.4	72.7	70.3	67.2	73.7	63.0	60.7	65.5	---	---	---	---	---	---	---	---	---
1956	69.7	66.7	72.9	70.5	67.5	73.9	63.6	61.3	66.1	---	---	---	---	---	---	---	---	---
1955	69.6	66.7	72.8	70.5	67.4	73.7	63.7	61.4	66.1	---	---	---	---	---	---	---	---	---
1954	69.6	66.7	72.8	70.5	67.5	73.7	63.4	61.1	65.9	---	---	---	---	---	---	---	---	---
1953	68.8	66.0	72.0	69.7	66.8	73.0	62.0	59.7	64.5	---	---	---	---	---	---	---	---	---
1952	68.6	65.8	71.6	69.5	66.6	72.6	61.4	59.1	63.8	---	---	---	---	---	---	---	---	---
1951	68.4	65.6	71.4	69.3	66.5	72.4	61.2	59.2	63.4	---	---	---	---	---	---	---	---	---
1950	68.2	65.6	71.1	69.1	66.5	72.2	60.8	59.1	62.9	---	---	---	---	---	---	---	---	---
1949	68.0	65.2	70.7	68.8	66.2	71.9	60.6	58.9	62.7	---	---	---	---	---	---	---	---	---
1948	67.2	64.6	69.9	68.0	65.5	71.0	60.0	58.1	62.5	---	---	---	---	---	---	---	---	---
1947	66.8	64.4	69.7	67.6	65.2	70.5	59.7	57.9	61.9	---	---	---	---	---	---	---	---	---
1946	66.7	64.4	69.4	67.5	65.1	70.3	59.1	57.5	61.0	---	---	---	---	---	---	---	---	---
1945	65.9	63.6	67.9	66.8	64.4	69.5	57.7	56.1	59.6	---	---	---	---	---	---	---	---	---
1944	65.2	63.6	66.8	66.2	64.5	68.4	56.6	55.8	57.7	---	---	---	---	---	---	---	---	---
1943	63.3	62.4	64.4	64.2	63.2	65.7	55.6	55.4	56.1	---	---	---	---	---	---	---	---	---
1942	66.2	64.7	67.9	67.3	65.9	69.4	56.6	55.4	58.2	---	---	---	---	---	---	---	---	---
1941	64.8	63.1	66.8	66.2	64.4	68.5	53.8	52.5	55.3	---	---	---	---	---	---	---	---	---
1940	62.9	60.8	65.2	64.2	62.1	66.6	53.1	51.5	54.9	---	---	---	---	---	---	---	---	---
1939	63.7	62.1	65.4	64.9	63.3	66.6	54.5	53.2	56.0	---	---	---	---	---	---	---	---	---
1938	63.5	61.9	65.3	65.0	63.2	66.8	52.9	51.7	54.3	---	---	---	---	---	---	---	---	---
1937	60.0	58.0	62.4	61.4	59.3	63.8	50.3	48.3	52.5	---	---	---	---	---	---	---	---	---
1936	58.5	56.6	60.6	59.8	58.0	61.9	49.0	47.0	51.4	---	---	---	---	---	---	---	---	---
1935	61.7	59.9	63.9	62.9	61.0	65.0	53.1	51.3	55.2	---	---	---	---	---	---	---	---	---
1934	61.1	59.3	63.3	62.4	60.5	64.6	51.8	50.2	53.7	---	---	---	---	---	---	---	---	---
1933	63.3	61.7	65.1	64.3	62.7	66.3	54.7	53.5	56.0	---	---	---	---	---	---	---	---	---
1932	62.1	61.0	63.5	63.2	62.0	64.5	53.7	52.8	54.6	---	---	---	---	---	---	---	---	---
1931	61.1	59.4	63.1	62.6	60.8	64.7	50.4	49.5	51.5	---	---	---	---	---	---	---	---	---
1930	59.7	58.1	61.6	61.4	59.7	63.5	48.1	47.3	49.2	---	---	---	---	---	---	---	---	---
1929	57.1	55.8	58.7	58.6	57.2	60.3	46.7	45.7	47.8	---	---	---	---	---	---	---	---	---
Death-registration states																		
1928	56.8	55.6	58.3	58.4	57.0	60.0	46.3	45.6	47.0	---	---	---	---	---	---	---	---	---
1927	60.4	59.0	62.1	62.0	60.5	63.9	48.2	47.6	48.9	---	---	---	---	---	---	---	---	---
1926	56.7	55.5	58.0	58.2	57.0	59.6	44.6	43.7	45.6	---	---	---	---	---	---	---	---	---
1925	59.0	57.6	60.6	60.7	59.3	62.4	45.7	44.9	46.7	---	---	---	---	---	---	---	---	---
1924	59.7	58.1	61.5	61.4	59.8	63.4	46.6	45.5	47.8	---	---	---	---	---	---	---	---	---
1923	57.2	56.1	58.5	58.3	57.1	59.6	48.3	47.7	48.9	---	---	---	---	---	---	---	---	---
1922	59.6	58.4	61.0	60.4	59.1	61.9	52.4	51.8	53.0	---	---	---	---	---	---	---	---	---
1921	60.8	60.0	61.8	61.8	60.8	62.9	51.5	51.6	51.3	---	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 19. Estimated life expectancy at birth, in years, by race, Hispanic origin, and sex: Death-registration states, 1900–1928, and United States, 1929–2013—Con.

[For selected years, life table values shown are estimates; see Technical Notes. Beginning in 1970, excludes deaths of nonresidents of the United States; see Technical Notes]

Area and year	All races and origins			White			Black ¹			Hispanic ²			Non-Hispanic white ²			Non-Hispanic black ²		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Death-registration states—Con.																		
1920	54.1	53.6	54.6	54.9	54.4	55.6	45.3	45.5	45.2	---	---	---	---	---	---	---	---	---
1919	54.7	53.5	56.0	55.8	54.5	57.4	44.5	44.5	44.4	---	---	---	---	---	---	---	---	---
1918	39.1	36.6	42.2	39.8	37.1	43.2	31.1	29.9	32.5	---	---	---	---	---	---	---	---	---
1917	50.9	48.4	54.0	52.0	49.3	55.3	38.8	37.0	40.8	---	---	---	---	---	---	---	---	---
1916	51.7	49.6	54.3	52.5	50.2	55.2	41.3	39.6	43.1	---	---	---	---	---	---	---	---	---
1915	54.5	52.5	56.8	55.1	53.1	57.5	38.9	37.5	40.5	---	---	---	---	---	---	---	---	---
1914	54.2	52.0	56.8	54.9	52.7	57.5	38.9	37.1	40.8	---	---	---	---	---	---	---	---	---
1913	52.5	50.3	55.0	53.0	50.8	55.7	38.4	36.7	40.3	---	---	---	---	---	---	---	---	---
1912	53.5	51.5	55.9	53.9	51.9	56.2	37.9	35.9	40.0	---	---	---	---	---	---	---	---	---
1911	52.6	50.9	54.4	53.0	51.3	54.9	36.4	34.6	38.2	---	---	---	---	---	---	---	---	---
1910	50.0	48.4	51.8	50.3	48.6	52.0	35.6	33.8	37.5	---	---	---	---	---	---	---	---	---
1909	52.1	50.5	53.8	52.5	50.9	54.2	35.7	34.2	37.3	---	---	---	---	---	---	---	---	---
1908	51.1	49.5	52.8	51.5	49.9	53.3	34.9	33.8	36.0	---	---	---	---	---	---	---	---	---
1907	47.6	45.6	49.9	48.1	46.0	50.4	32.5	31.1	34.0	---	---	---	---	---	---	---	---	---
1906	48.7	46.9	50.8	49.3	47.3	51.4	32.9	31.8	33.9	---	---	---	---	---	---	---	---	---
1905	48.7	47.3	50.2	49.1	47.6	50.6	31.3	29.6	33.1	---	---	---	---	---	---	---	---	---
1904	47.6	46.2	49.1	48.0	46.6	49.5	30.8	29.1	32.7	---	---	---	---	---	---	---	---	---
1903	50.5	49.1	52.0	50.9	49.5	52.5	33.1	31.7	34.6	---	---	---	---	---	---	---	---	---
1902	51.5	49.8	53.4	51.9	50.2	53.8	34.6	32.9	36.4	---	---	---	---	---	---	---	---	---
1901	49.1	47.6	50.6	49.4	48.0	51.0	33.7	32.2	35.3	---	---	---	---	---	---	---	---	---
1900	47.3	46.3	48.3	47.6	46.6	48.7	33.0	32.5	33.5	---	---	---	---	---	---	---	---	---

--- Data not available.

¹Prior to 1970, data for the black population are not available. Data shown for 1900–1969 are for the nonwhite population. See Technical Notes.²Life tables by Hispanic origin are based on death rates that have been adjusted for race and ethnicity misclassification on death certificates. Updated classification ratios were applied to data years 2010–2013; see Technical Notes.³Includes Alaska in 1959 and Hawaii in 1960.⁴Life expectancies for 2001–2013 were calculated using a revised methodology described in the Technical Notes.⁵Life expectancies for 2001–2009 have been re-estimated using new intercensal population estimates and may differ from data previously published; see Technical Notes.⁶Deaths based on a 50% sample.⁷Figures by race exclude data for residents of New Jersey; see Technical Notes.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 20. Survivorship, by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2013

[Includes Alaska and Hawaii beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and District of Columbia; and 1919–1921, 34 states and District of Columbia. Beginning in 1970, excludes deaths of nonresidents of the United States; see Technical Notes]

Age (years), race, and sex	Number of survivors out of 100,000 born alive, l_x											
	2013	1999–2001	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
All races												
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,404	99,305	99,064	98,740	97,998	97,407	97,024	95,290	94,028	92,515	88,538	87,552
5	99,303	99,176	98,877	98,495	97,668	96,998	96,482	94,220	91,978	83,389	83,887	81,804
10	99,244	99,097	98,766	98,347	97,460	96,765	96,177	93,710	91,106	88,129	82,458	80,052
15	99,174	98,998	98,635	98,196	97,261	96,551	95,885	93,235	90,385	87,144	81,506	78,963
20	98,953	98,664	98,215	97,741	96,716	96,111	95,366	92,435	89,089	85,441	80,074	77,239
25	98,542	98,203	97,671	97,110	96,000	95,517	94,676	91,335	87,269	83,146	78,046	74,768
30	98,062	97,751	97,070	96,477	95,307	94,905	93,919	90,078	85,302	80,642	75,779	72,043
35	97,500	97,201	96,322	95,808	94,482	94,144	92,976	88,573	83,118	77,961	73,127	69,078
40	96,811	96,422	95,373	94,926	93,322	93,064	91,648	86,650	80,557	75,114	70,042	65,890
45	95,848	95,274	94,154	93,599	91,587	91,378	89,634	84,069	77,343	72,036	66,561	62,436
50	94,352	93,601	92,370	91,526	88,972	88,756	86,591	80,487	73,321	68,429	62,460	58,514
55	92,062	91,232	89,658	88,348	85,110	84,711	82,176	75,557	68,182	63,947	57,555	53,852
60	88,788	87,642	85,537	83,726	79,529	79,067	75,921	68,924	61,563	58,079	51,138	47,946
65	84,343	82,330	79,519	77,107	71,933	71,147	67,555	60,366	53,195	50,560	43,194	40,911
70	78,308	74,891	71,357	68,248	61,984	60,857	56,987	49,655	42,768	41,090	33,816	32,390
75	69,764	64,644	60,449	56,799	49,705	48,170	43,903	36,735	30,789	29,729	23,552	22,960
80	57,879	50,885	47,084	43,180	35,285	33,576	29,313	22,883	18,580	18,298	13,712	13,529
85	42,192	34,515	31,770	27,960	20,908	18,542	15,785	11,073	8,542	8,683	6,001	6,053
90	24,208	18,496	17,046	14,154	9,297	7,080	6,144	3,796	2,998	2,941	1,868	1,867
95	9,299	6,879	6,282	5,043	2,786	1,524	1,511	857	636	646	361	344
100	1,971	1,479	1,424	1,150	542	183	199	123	62	67	40	31
Male												
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,349	99,239	98,961	98,607	97,755	97,087	96,661	94,762	93,440	91,745	87,505	86,426
5	99,235	99,095	98,754	98,333	97,395	96,643	96,077	93,624	91,294	88,505	82,718	80,548
10	99,170	99,008	98,627	98,160	97,151	96,375	95,726	93,054	90,346	87,184	81,249	78,775
15	99,090	98,890	98,464	97,972	96,904	96,107	95,366	92,508	89,561	86,156	80,261	77,681
20	98,784	98,426	97,854	97,316	96,126	95,491	94,695	91,617	88,220	84,440	78,792	75,984
25	98,189	97,747	97,049	96,361	95,040	94,631	93,791	90,385	86,359	82,252	76,675	73,472
30	97,518	97,114	96,166	95,430	94,072	93,826	92,861	89,009	84,346	79,890	74,378	70,747
35	96,770	96,385	95,091	94,501	92,997	92,889	91,760	87,371	82,075	77,514	71,614	67,752
40	95,906	95,389	93,761	93,345	91,541	91,572	90,207	85,246	79,357	74,432	68,297	64,447
45	94,734	93,940	92,139	91,649	89,369	89,492	87,819	82,336	75,882	71,244	64,518	60,849
50	92,925	91,818	89,865	89,007	86,070	86,199	84,158	78,254	71,518	67,553	60,118	56,736
55	90,136	88,897	86,492	84,936	81,139	81,039	78,781	72,627	65,981	62,965	54,970	51,939
60	86,094	84,551	81,378	79,012	73,958	73,887	71,246	65,142	58,909	56,917	48,343	45,895
65	80,668	78,241	73,971	70,646	64,318	64,177	61,566	55,776	50,154	49,218	40,264	38,736
70	73,656	69,491	64,107	59,681	52,296	52,244	49,950	44,588	39,516	39,668	31,023	30,217
75	64,050	57,688	51,385	46,272	38,797	38,950	36,756	31,864	27,718	28,316	21,213	21,076
80	51,252	42,769	36,749	31,810	24,921	25,300	25,237	18,995	16,172	17,128	11,942	12,084
85	35,214	26,527	21,815	18,020	13,168	12,845	11,750	8,693	7,107	7,920	5,059	5,179
90	18,213	12,473	9,878	7,732	5,107	4,609	4,197	2,787	2,283	2,527	1,502	1,508
95	5,973	3,855	2,927	2,279	1,326	970	955	586	451	556	289	262
100	1,023	645	529	423	222	117	121	78	40	62	33	22
Female												
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,463	99,375	99,172	98,880	98,254	97,744	97,406	95,848	94,728	93,383	89,623	88,733
5	99,374	99,261	99,006	98,666	97,955	97,371	96,908	94,848	92,789	90,380	85,117	83,119
10	99,322	99,190	98,911	98,544	97,784	97,173	96,652	94,402	92,008	89,186	83,728	81,390
15	99,262	99,111	98,814	98,432	97,636	97,016	96,431	94,000	91,364	88,247	82,813	80,307
20	99,132	98,915	98,597	98,184	97,331	96,756	96,066	93,293	90,116	86,556	81,418	78,555
25	98,913	98,682	98,325	97,883	96,966	96,418	95,583	92,322	88,328	84,135	79,481	76,119
30	98,633	98,418	98,013	97,551	96,544	95,996	94,933	91,182	86,398	81,463	77,247	73,394
35	98,262	98,052	97,596	97,140	95,966	95,409	94,206	89,810	84,304	78,713	74,719	70,463
40	97,749	97,493	97,033	96,531	95,097	94,560	93,101	88,092	81,927	75,907	71,894	67,407
45	96,997	96,648	96,222	95,570	93,793	93,265	91,469	85,856	79,041	72,954	68,755	64,121

See footnotes at end of table.

Table 20. Survivorship, by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2013—Con.

[Includes Alaska and Hawaii beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and District of Columbia; and 1919–1921, 34 states and District of Columbia. Beginning in 1970, excludes deaths of nonresidents of the United States; see Technical Notes]

Age (years), race, and sex	Number of survivors out of 100,000 born alive, l_x											
	2013	1999–2001	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
Female—Con.												
50	95,816	95,425	94,932	94,060	91,852	91,327	89,075	82,828	75,456	69,452	65,001	60,415
55	94,023	93,609	92,881	91,760	89,066	88,451	85,694	78,708	70,832	65,099	60,392	55,908
60	91,508	90,767	89,742	88,414	85,139	84,430	80,890	73,093	64,795	59,438	54,226	50,155
65	88,030	86,433	85,075	83,520	79,698	78,462	74,119	65,523	56,924	52,126	46,438	43,246
70	82,965	80,219	78,522	76,720	71,955	70,100	64,873	55,449	46,774	42,741	36,916	34,721
75	75,460	71,311	69,287	67,186	61,107	58,394	52,111	42,425	34,600	31,344	26,155	24,994
80	64,427	58,455	56,986	54,372	46,445	43,063	36,486	27,524	21,578	19,613	15,682	15,129
85	48,940	41,830	41,115	37,772	29,538	25,269	20,668	13,972	10,322	9,515	7,051	7,063
90	29,723	23,936	23,666	20,578	14,160	10,056	8,548	5,044	3,656	3,314	2,269	2,306
95	12,212	9,560	9,346	7,862	4,565	2,193	2,207	1,195	807	728	441	452
100	2,754	2,183	2,251	1,927	954	264	298	179	82	72	49	43
White												
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,494	99,429	99,233	98,898	98,224	97,714	97,278	95,685	94,392	92,780	88,709	87,762
5	99,401	99,313	99,068	98,675	97,930	97,353	96,790	94,713	92,466	89,771	84,147	82,071
10	99,348	99,239	98,966	98,536	97,733	97,131	96,502	94,228	91,627	88,536	82,734	80,371
15	99,279	99,146	98,843	98,391	97,546	96,928	96,228	93,792	90,982	87,633	81,816	79,344
20	99,069	98,826	98,455	97,939	97,036	96,508	95,763	93,117	89,933	86,159	80,407	77,998
25	98,672	98,406	97,972	97,340	96,406	95,965	95,169	92,213	88,454	84,106	78,392	75,202
30	98,207	98,000	97,451	96,774	95,824	95,440	94,536	91,185	86,836	81,787	76,167	72,317
35	97,660	97,506	96,810	96,192	95,152	94,798	93,750	89,941	85,004	79,277	73,568	69,522
40	96,988	96,799	96,000	95,427	94,190	93,870	92,616	88,318	82,803	76,642	70,525	66,082
45	96,047	95,759	94,932	94,257	92,681	92,374	90,847	86,069	79,989	73,705	67,090	62,920
50	94,587	94,242	93,326	92,384	90,306	89,958	88,110	82,833	76,340	70,250	62,994	58,647
55	92,344	92,050	90,833	89,427	86,688	86,173	84,027	78,218	71,551	65,875	58,163	54,450
60	89,170	88,655	86,943	85,031	81,323	80,811	78,066	71,785	65,100	60,013	51,822	48,288
65	84,858	83,518	81,123	78,585	73,889	73,102	69,850	63,201	56,655	52,411	43,904	41,505
70	78,882	76,219	73,106	69,801	63,991	62,834	59,189	52,165	45,841	42,736	34,484	32,902
75	70,341	66,022	62,175	58,299	51,586	49,895	45,688	38,610	33,406	31,086	24,151	23,356
80	58,373	52,160	48,583	44,409	36,659	34,697	30,438	23,976	20,260	19,149	14,100	13,794
85	42,493	35,461	32,850	28,768	21,578	19,017	16,239	11,483	9,325	9,078	6,178	6,192
90	24,283	18,964	17,571	14,471	9,433	7,149	6,201	3,819	3,066	2,991	1,918	1,919
95	9,161	6,971	6,416	5,067	2,743	1,521	1,500	801	636	643	364	355
100	1,862	1,454	1,423	1,105	487	183	196	98	58	62	38	31
White male												
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,441	99,373	99,138	98,769	97,994	97,408	96,931	95,188	93,768	91,975	87,674	86,655
5	99,337	99,243	98,956	98,519	97,671	97,015	96,403	94,150	91,738	88,842	82,972	80,864
10	99,277	99,163	98,839	98,357	97,441	96,758	96,069	93,601	90,810	87,530	81,519	79,109
15	99,200	99,052	98,686	98,176	97,208	96,503	95,728	93,089	90,074	86,546	80,549	78,037
20	98,916	98,616	98,134	97,525	96,480	95,908	95,104	92,293	88,904	84,997	79,116	76,376
25	98,351	98,003	97,430	96,616	95,524	95,106	94,294	91,241	87,371	83,061	77,047	73,907
30	97,707	97,436	96,662	95,783	94,716	94,401	93,489	90,092	85,707	80,888	74,810	71,219
35	96,984	96,774	95,731	94,980	93,843	93,589	92,543	88,713	83,812	78,441	72,108	68,245
40	96,148	95,859	94,588	93,984	92,631	92,427	91,173	86,880	81,457	75,733	68,848	64,954
45	95,001	94,530	93,167	92,494	90,725	90,533	89,002	84,285	78,345	72,696	65,115	61,369
50	93,231	92,588	91,124	90,105	87,690	87,424	85,601	80,521	74,288	69,107	60,741	57,274
55	90,483	89,883	88,022	86,303	83,001	82,463	80,496	75,156	68,981	64,574	55,622	52,491
60	86,559	85,773	83,182	80,625	75,969	75,485	73,172	67,787	61,933	58,498	48,987	46,452
65	81,308	79,657	75,962	72,393	66,343	65,834	63,541	58,305	52,964	50,663	40,862	39,245
70	74,386	71,039	66,181	61,384	54,138	53,825	51,735	46,739	41,880	40,873	31,527	30,640
75	64,799	59,245	53,308	47,712	40,324	40,207	38,104	33,404	29,471	29,205	21,585	21,387
80	51,912	44,121	38,245	32,788	25,885	25,993	24,005	19,860	17,221	17,655	12,160	12,266
85	35,637	27,425	22,720	18,538	13,527	13,065	12,015	9,013	7,572	8,154	5,145	5,252
90	18,408	12,840	10,214	7,891	5,125	4,600	4,209	2,812	2,356	2,568	1,523	1,523
95	5,887	3,899	2,988	2,279	1,274	956	942	552	461	556	289	263
100	945	625	523	404	189	115	118	65	40	61	31	22

See footnotes at end of table.

Table 20. Survivorship, by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2013—Con.

[Includes Alaska and Hawaii beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and District of Columbia; and 1919–1921, 34 states and District of Columbia. Beginning in 1970, excludes deaths of nonresidents of the United States; see Technical Notes]

Age (years), race, and sex	Number of survivors out of 100,000 born alive, l_x											
	2013	1999–2001	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
White female												
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	99,549	99,488	99,333	99,035	98,468	98,036	97,645	96,211	95,037	93,608	89,774	88,939
5	99,468	99,385	99,187	98,841	98,203	97,709	97,199	95,309	93,216	90,721	85,349	83,426
10	99,422	99,319	99,099	98,725	98,042	97,525	96,960	94,890	92,466	89,564	83,979	81,723
15	99,363	99,245	99,007	98,618	97,902	97,375	96,756	94,534	91,894	88,712	83,093	80,680
20	99,231	99,049	98,795	98,374	97,618	97,135	96,454	93,984	90,939	87,281	81,750	78,978
25	99,013	98,835	98,547	98,093	97,299	96,844	96,072	93,228	89,524	85,163	79,865	76,588
30	98,738	98,602	98,283	97,802	96,945	96,499	95,605	92,320	87,972	82,740	77,676	73,887
35	98,376	98,282	97,939	97,445	96,474	96,026	94,977	91,211	86,248	80,206	75,200	70,971
40	97,875	97,790	97,472	96,913	95,762	95,326	94,080	89,805	84,256	77,624	72,425	67,935
45	97,147	97,049	96,768	96,065	94,649	94,228	92,725	87,920	81,780	74,871	69,341	64,677
50	96,005	95,962	95,608	94,710	92,924	92,522	90,685	85,267	78,572	71,547	65,629	61,005
55	94,276	94,293	93,730	92,594	90,383	89,967	87,699	81,520	74,321	67,323	61,053	56,509
60	91,857	91,615	90,789	89,451	86,726	86,339	83,279	76,200	68,462	61,704	54,900	50,752
65	88,491	87,449	86,339	84,764	81,579	80,739	76,773	68,701	60,499	54,299	47,086	43,806
70	83,469	81,400	79,984	78,139	74,101	72,507	67,545	58,363	49,932	44,638	37,482	35,206
75	75,961	72,595	70,834	68,712	63,290	60,461	54,397	44,685	37,024	32,777	26,569	25,362
80	64,851	59,721	58,454	55,770	48,182	44,676	38,026	28,882	23,053	20,492	15,929	15,349
85	49,207	42,848	42,274	38,774	30,490	26,046	21,348	14,487	10,937	9,909	7,152	7,149
90	29,769	24,491	24,270	20,996	14,406	10,219	8,662	5,061	3,719	3,372	2,291	2,322
95	12,040	9,680	9,495	7,900	4,526	2,203	2,200	1,109	797	721	434	448
100	2,619	2,147	2,239	1,858	872	265	294	139	74	63	44	41
Black¹												
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	98,878	98,578	98,187	97,885	96,731	95,732	95,407	92,584	92,035	90,379	79,784	76,609
5	98,731	98,382	97,884	97,522	96,207	95,051	94,482	90,983	89,303	86,174	70,691	66,222
10	98,647	98,271	97,720	97,322	95,928	94,745	94,060	90,339	88,258	84,690	68,437	63,410
15	98,561	98,139	97,539	97,134	95,661	94,460	93,646	89,591	87,156	83,180	66,410	61,060
20	98,258	97,701	96,925	96,652	94,887	93,880	92,738	87,839	84,386	79,641	63,165	57,931
25	97,701	96,946	95,972	95,804	93,513	92,925	91,321	85,210	80,320	74,973	59,608	54,512
30	97,019	96,143	94,809	94,680	91,934	91,699	89,584	82,194	75,962	70,492	56,112	51,287
35	96,215	95,164	93,260	93,288	89,977	90,046	87,402	78,683	71,141	65,865	52,125	48,007
40	95,219	93,809	91,239	91,439	87,304	87,766	84,478	74,466	65,974	61,244	47,866	44,518
45	93,878	91,770	88,689	88,834	83,700	84,501	80,507	69,284	59,827	56,442	43,054	40,628
50	91,848	88,761	85,285	85,044	78,938	80,172	74,976	62,702	53,141	51,422	37,800	36,103
55	88,771	84,657	80,635	79,816	72,826	73,893	67,660	54,846	45,558	45,803	32,233	31,404
60	84,167	79,007	74,335	72,913	65,250	65,795	58,593	46,318	37,654	39,418	26,046	25,698
65	77,927	71,704	66,154	64,391	56,102	56,038	48,649	37,838	30,015	32,738	19,806	20,474
70	70,296	62,349	56,192	54,617	45,785	45,434	38,616	29,654	22,505	25,585	14,021	14,960
75	60,454	50,987	44,872	43,274	34,262	34,531	28,968	21,798	15,546	18,011	9,139	9,956
80	48,330	37,964	33,149	31,711	23,710	24,815	20,003	14,408	9,589	11,376	5,158	5,750
85	34,036	24,677	21,352	19,939	15,044	15,337	12,433	8,326	4,900	5,794	2,414	2,782
90	19,509	13,204	11,646	10,713	8,087	7,195	6,394	4,077	2,044	2,317	913	1,054
95	8,374	5,368	4,729	4,463	3,252	1,777	2,010	1,557	638	689	324	296
100	2,411	1,491	1,376	1,360	1,036	214	301	399	120	129	77	57
Black male¹												
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	98,797	98,437	98,023	97,703	96,394	95,301	94,911	91,772	91,268	89,499	78,065	74,674
5	98,636	98,219	97,688	97,300	95,826	94,570	93,921	90,082	88,412	85,195	68,589	64,385
10	98,545	98,093	97,501	97,061	95,497	94,234	93,453	89,393	87,311	83,768	66,377	61,730
15	98,444	97,930	97,268	96,826	95,161	93,874	92,965	88,610	86,152	82,332	64,478	59,667
20	97,984	97,275	96,301	96,132	94,053	93,108	91,941	86,968	83,621	79,057	61,426	56,733
25	97,136	96,103	94,809	94,827	91,904	91,825	90,285	84,227	79,516	74,540	57,736	53,285
30	96,141	94,940	93,070	93,125	89,584	90,270	88,327	80,979	75,083	70,344	54,073	49,867
35	95,028	93,641	90,827	91,080	86,885	88,331	85,940	77,221	70,049	65,873	49,865	46,541
40	93,742	91,945	87,948	88,490	83,441	85,744	82,832	72,780	64,710	61,353	45,414	42,989
45	92,111	89,439	84,467	84,997	78,976	82,075	78,686	67,346	58,432	56,589	40,563	39,230

See footnotes at end of table.

Table 20. Survivorship, by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2013—Con.

[Includes Alaska and Hawaii beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and District of Columbia; and 1919–1921, 34 states and District of Columbia. Beginning in 1970, excludes deaths of nonresidents of the United States; see Technical Notes]

Age (years), race, and sex	Number of survivors out of 100,000 born alive, l_x											
	2013	1999–2001	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
Black male¹—Con.												
50	89,692	85,653	79,984	80,065	73,282	77,239	72,891	60,495	51,748	51,880	35,427	34,766
55	86,064	80,529	74,095	73,413	66,101	70,351	65,122	52,426	44,436	46,581	29,754	29,987
60	80,416	73,588	66,334	64,980	57,457	61,669	55,535	43,833	36,790	40,506	23,750	24,194
65	72,719	64,980	56,795	55,061	47,485	51,392	45,198	35,371	29,314	34,042	17,806	19,015
70	63,708	54,253	45,690	44,213	36,925	39,914	35,018	27,236	21,741	26,923	12,295	13,829
75	52,561	41,693	33,755	32,717	25,921	29,064	25,472	19,456	14,419	18,854	7,494	8,892
80	39,574	28,497	22,549	22,017	16,560	19,994	16,904	12,186	8,239	11,615	3,894	4,831
85	25,717	16,532	12,709	12,383	9,648	11,620	9,898	6,444	3,660	5,605	1,747	2,030
90	13,086	7,625	5,972	5,708	4,696	5,174	4,642	2,836	1,246	2,040	595	634
95	4,671	2,565	1,971	2,009	1,721	1,240	1,342	961	307	552	189	137
100	1,033	563	466	513	489	149	192	209	41	77	40	18
Black female¹												
0	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1	98,961	98,723	98,356	98,073	97,076	96,172	95,913	93,416	92,796	91,251	81,493	78,525
5	98,829	98,550	98,087	97,751	96,598	95,543	95,055	91,906	90,185	87,149	72,768	68,056
10	98,752	98,456	97,946	97,590	96,369	95,265	94,679	91,308	89,201	85,607	70,508	65,111
15	98,683	98,354	97,818	97,450	96,172	95,057	94,343	90,594	88,088	83,954	68,218	62,384
20	98,542	98,141	97,566	97,180	95,729	94,660	93,544	88,736	85,078	80,154	64,764	59,053
25	98,283	97,785	97,140	96,754	95,035	94,005	92,336	86,198	81,067	75,359	61,430	55,795
30	97,904	97,314	96,514	96,150	94,114	93,070	90,799	83,384	76,816	70,633	58,281	52,773
35	97,389	96,632	95,599	95,338	92,807	91,670	88,805	80,092	72,192	65,857	54,595	49,567
40	96,658	95,588	94,364	94,137	90,817	89,676	86,052	76,084	67,271	61,130	50,568	46,146
45	95,582	93,979	92,676	92,322	88,001	86,793	82,257	71,157	61,365	56,230	45,947	42,279
50	93,913	91,680	90,277	89,563	84,168	82,979	77,007	64,885	54,920	50,780	40,886	37,681
55	91,343	88,517	86,793	85,653	79,177	77,362	70,196	57,314	47,074	44,742	35,415	33,124
60	87,696	84,044	81,886	80,293	72,820	69,941	61,758	48,928	38,761	37,954	28,908	27,524
65	82,761	77,941	75,031	73,266	64,716	60,825	52,358	40,504	30,852	31,044	22,302	21,995
70	76,374	69,778	66,278	64,729	54,873	51,274	42,612	32,354	23,341	24,107	15,871	16,140
75	67,684	59,361	55,684	53,831	43,193	40,540	32,981	24,502	16,576	17,216	10,657	11,066
80	56,278	46,453	43,622	41,686	31,756	30,315	23,712	17,039	10,822	11,151	6,324	6,708
85	41,512	32,053	30,089	28,004	21,358	19,744	15,550	10,622	6,033	5,972	3,029	3,567
90	25,190	18,347	17,536	16,260	12,210	9,675	8,590	5,652	2,774	2,579	1,206	1,492
95	11,366	7,989	7,687	7,312	5,217	2,438	2,875	2,345	941	818	448	462
100	3,349	2,351	2,364	2,398	1,803	293	445	659	193	179	112	97

¹For 1939–1941 and 1949–1951, data shown are for the entire nonwhite population. During these periods, life tables were not constructed for the black population. See Technical Notes.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table 21. Life expectancy, by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2013

[Includes Alaska and Hawaii beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and District of Columbia; and 1919–1921, 34 states and District of Columbia. Beginning in 1970, excludes deaths of nonresidents of the United States; see Technical Notes]

Age (years), race, and sex	Average number of years of life remaining, e_x											
	2013	1999–2001	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
All races												
0	78.83	76.86	75.37	73.88	70.75	69.89	68.07	63.62	59.20	56.40	51.49	49.24
1	78.30	76.40	75.08	73.82	71.19	70.75	69.16	65.76	61.94	59.94	57.11	55.20
5	74.38	72.49	71.22	70.00	67.43	67.04	65.54	62.49	59.29	57.99	56.21	54.98
10	69.42	67.55	66.29	65.10	62.57	62.19	60.74	57.82	54.84	53.79	52.15	51.14
15	64.47	62.61	61.38	60.19	57.69	57.33	55.91	53.10	50.25	49.37	47.73	46.81
20	59.60	57.82	56.63	55.46	53.00	52.58	51.20	48.54	45.94	45.30	43.53	42.79
25	54.84	53.08	51.93	50.81	48.37	47.89	46.56	44.09	41.85	41.47	39.60	39.12
30	50.10	48.31	47.23	46.12	43.71	43.18	41.91	39.67	37.75	37.68	35.70	35.51
35	45.37	43.57	42.58	41.43	39.07	38.51	37.31	35.30	33.68	33.89	31.90	31.92
40	40.68	38.90	37.98	36.79	34.52	33.92	32.81	31.03	29.67	30.08	28.20	28.34
45	36.06	34.34	33.44	32.27	30.12	29.50	28.49	26.90	25.79	26.25	24.54	24.77
50	31.59	29.90	29.03	27.94	25.93	25.29	24.40	22.98	22.06	22.50	20.98	21.26
55	27.31	25.61	24.83	23.85	21.99	21.37	20.57	19.31	18.53	18.90	17.55	17.88
60	23.22	21.55	20.90	20.02	18.34	17.71	17.04	15.91	15.24	15.54	14.42	14.76
65	19.30	17.77	17.28	16.51	15.00	14.39	13.83	12.80	12.23	12.47	11.60	11.86
70	15.59	14.27	13.96	13.32	12.00	11.38	10.92	10.00	9.58	9.74	9.11	9.30
75	12.17	11.12	11.00	10.48	9.32	8.71	8.40	7.62	7.32	7.49	6.99	7.08
80	9.13	8.42	8.40	7.98	7.10	6.39	6.34	5.73	5.50	5.63	5.25	5.30
85	6.56	6.22	6.23	5.96	5.28	4.58	4.69	4.31	4.19	4.21	4.00	3.96
90	4.58	4.49	4.50	4.43	3.94	3.22	3.44	3.30	3.15	3.22	3.03	2.95
95	3.18	3.19	3.29	3.34	3.06	2.43	2.54	2.61	2.26	2.32	2.35	2.18
100	2.27	2.27	2.46	2.73	2.62	1.91	1.92	2.13	1.51	1.53	1.85	1.58
Male												
0	76.42	74.13	71.83	70.11	67.04	66.80	65.47	61.60	57.71	55.50	49.86	47.88
1	75.92	73.70	71.58	70.10	67.58	67.80	66.73	64.00	60.75	59.47	55.95	54.35
5	72.00	69.80	67.73	66.29	63.82	64.10	63.12	60.76	58.14	57.60	55.11	54.22
10	67.05	64.86	62.81	61.41	58.98	59.27	58.35	56.12	53.75	53.44	51.07	50.39
15	62.10	59.94	57.91	56.52	54.12	54.43	53.56	51.43	49.18	49.05	46.66	46.06
20	57.28	55.21	53.25	51.88	49.54	49.77	48.92	46.91	44.88	44.99	42.48	42.03
25	52.61	50.57	48.67	47.37	45.07	45.19	44.36	42.51	40.79	41.11	38.59	38.38
30	47.96	45.89	44.10	42.81	40.51	40.56	39.78	38.13	36.71	37.26	34.70	34.76
35	43.31	41.21	39.57	38.20	35.95	35.94	35.23	33.79	32.65	33.43	30.94	31.19
40	38.68	36.62	35.09	33.64	31.48	31.42	30.79	29.57	28.68	29.63	27.32	27.65
45	34.12	32.14	30.66	29.22	27.18	27.09	26.55	25.52	24.87	25.84	23.77	24.14
50	29.74	27.82	26.37	25.00	23.12	23.02	22.59	21.72	21.25	22.11	20.32	20.70
55	25.57	23.65	22.30	21.08	19.36	19.32	18.96	18.20	17.79	18.53	16.98	17.38
60	21.65	19.73	18.53	17.46	15.99	15.94	15.68	14.99	14.62	15.22	13.95	14.33
65	17.93	16.11	15.12	14.21	12.99	12.95	12.74	12.07	11.72	12.20	11.24	11.50
70	14.39	12.80	12.05	11.35	10.39	10.33	10.11	9.46	9.18	9.52	8.83	9.02
75	11.15	9.89	9.39	8.90	8.13	7.99	7.83	7.22	7.02	7.31	6.75	6.84
80	8.29	7.44	7.12	6.80	6.27	5.95	5.94	5.44	5.27	5.49	5.10	5.11
85	5.89	5.47	5.31	5.13	4.73	4.39	4.41	4.11	4.02	4.10	3.90	3.82
90	4.10	3.95	3.89	3.89	3.60	3.18	3.30	3.17	3.06	3.21	3.01	2.86
95	2.86	2.82	2.92	2.98	2.82	2.43	2.49	2.52	2.21	2.38	2.36	2.13
100	2.07	2.03	2.25	2.49	2.43	1.91	1.92	2.05	1.50	1.58	1.81	1.55
Female												
0	81.18	79.47	78.81	77.62	74.64	73.24	70.96	65.89	60.90	57.40	53.24	50.70
1	80.62	78.97	78.47	77.50	74.97	73.93	71.84	67.73	65.37	60.45	58.37	56.10
5	76.69	75.06	74.60	73.67	71.19	70.21	68.21	64.43	60.66	58.41	57.39	55.80
10	71.72	70.11	69.67	68.75	66.31	65.35	63.38	59.73	56.16	54.16	53.31	51.94
15	66.77	65.16	64.73	63.83	61.41	60.45	58.52	54.97	51.54	49.71	48.87	47.60
20	61.85	60.29	59.87	58.98	56.59	55.60	53.73	50.37	47.21	45.63	44.66	43.60
25	56.98	55.42	55.03	54.16	51.80	50.79	48.99	45.87	43.11	41.86	40.69	39.92
30	52.14	50.57	50.19	49.33	47.01	46.00	44.28	41.41	39.02	38.15	36.79	36.30
35	47.32	45.75	45.40	44.53	42.28	41.27	39.63	37.01	34.92	34.40	32.95	32.71
40	42.56	40.99	40.65	39.80	37.64	36.61	35.06	32.68	30.86	30.58	29.15	29.08
45	37.87	36.33	35.97	35.17	33.13	32.09	30.64	28.46	26.89	26.71	25.36	25.44

See footnotes at end of table.

Table 21. Life expectancy, by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2013—Con.

[Includes Alaska and Hawaii beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and District of Columbia; and 1919–1921, 34 states and District of Columbia. Beginning in 1970, excludes deaths of nonresidents of the United States; see Technical Notes]

Age (years), race, and sex	Average number of years of life remaining, e_x											
	2013	1999–2001	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
Female—Con.												
50	33.30	31.76	31.42	30.69	28.77	27.71	26.40	24.40	23.05	22.92	21.67	21.84
55	28.88	27.32	27.05	26.39	24.59	23.53	22.33	20.54	19.38	19.28	18.13	18.39
60	24.61	23.10	22.90	22.29	20.60	19.52	18.50	16.92	15.94	15.87	14.90	15.21
65	20.47	19.12	19.02	18.44	16.83	15.80	14.95	13.57	12.78	12.73	11.96	12.22
70	16.56	15.40	15.38	14.84	13.35	12.37	11.71	10.56	9.99	9.96	9.38	9.59
75	12.95	11.99	12.08	11.58	10.26	9.33	8.94	8.01	7.61	7.65	7.20	7.34
80	9.71	9.05	9.13	8.69	7.68	6.72	6.67	5.99	5.70	5.75	5.37	5.51
85	6.95	6.62	6.66	6.38	5.63	4.71	4.90	4.47	4.32	4.30	4.08	4.12
90	4.80	4.71	4.73	4.66	4.14	3.25	3.54	3.39	3.24	3.23	3.05	3.04
95	3.28	3.29	3.40	3.48	3.18	2.43	2.57	2.67	2.30	2.27	2.34	2.24
100	2.30	2.29	2.52	2.81	2.69	1.91	1.93	2.17	1.52	1.48	1.91	1.61
White												
0	79.05	77.43	76.13	74.53	71.62	70.73	69.02	64.92	60.86	57.42	51.90	49.64
1	78.45	76.87	75.72	74.35	71.91	71.38	69.95	66.84	63.46	60.87	57.46	55.47
5	74.52	72.96	71.84	70.52	68.12	67.64	66.29	63.52	60.75	58.86	56.51	55.18
10	69.56	68.01	66.92	65.62	63.26	62.79	61.48	58.83	56.29	54.65	52.43	51.34
15	64.61	63.07	61.99	60.71	58.37	57.92	56.65	54.09	51.69	50.21	48.01	47.01
20	59.74	58.27	57.23	55.98	53.66	53.16	51.91	49.47	47.28	46.04	43.77	43.17
25	54.97	53.51	52.50	51.30	49.00	48.44	47.22	44.92	43.02	42.07	39.79	39.26
30	50.22	48.72	47.76	46.59	44.28	43.69	42.52	40.40	38.76	38.17	35.86	35.51
35	45.48	43.95	43.06	41.86	39.58	38.97	37.86	35.93	34.50	34.27	32.03	32.01
40	40.78	39.25	38.41	37.17	34.95	34.33	33.29	31.54	30.33	30.38	28.29	28.28
45	36.15	34.65	33.81	32.60	30.48	29.84	28.88	27.29	26.29	26.45	24.60	24.82
50	31.67	30.17	29.34	28.21	26.21	25.57	24.70	23.26	22.42	22.64	21.01	21.18
55	27.37	25.82	25.08	24.05	22.19	21.58	20.77	19.47	18.75	18.97	17.57	17.91
60	23.26	21.71	21.08	20.16	18.48	17.84	17.15	15.98	15.37	15.57	14.43	14.73
65	19.30	17.88	17.40	16.59	15.08	14.44	13.86	12.80	12.28	12.47	11.60	11.87
70	15.57	14.34	14.02	13.35	12.01	11.37	10.89	9.96	9.58	9.72	9.10	9.31
75	12.14	11.15	11.03	10.47	9.27	8.65	8.34	7.55	7.30	7.47	6.98	7.08
80	9.08	8.42	8.39	7.95	7.01	6.33	6.27	5.64	5.45	5.59	5.22	5.30
85	6.51	6.19	6.20	5.90	5.19	4.53	4.62	4.20	4.12	4.15	3.97	3.95
90	4.51	4.44	4.46	4.36	3.84	3.20	3.41	3.16	3.10	3.17	3.00	2.93
95	3.11	3.14	3.25	3.25	2.92	2.43	2.53	2.45	2.22	2.28	2.29	2.16
100	2.21	2.22	2.43	2.62	2.41	1.91	1.92	1.95	1.48	1.50	1.71	1.56
White male												
0	76.71	74.78	72.72	70.82	67.94	67.55	66.31	62.81	59.12	56.34	50.23	48.23
1	76.14	74.25	72.35	70.70	68.33	68.34	67.41	64.98	62.04	60.24	56.26	54.61
5	72.22	70.34	68.48	66.87	64.55	64.61	63.77	61.68	59.38	58.31	55.37	54.43
10	67.27	65.40	63.55	61.98	59.69	59.78	58.98	57.03	54.96	54.15	51.32	50.59
15	62.31	60.47	58.65	57.09	54.83	54.93	54.18	52.33	50.39	49.74	46.91	46.25
20	57.49	55.72	53.96	52.45	50.22	50.25	49.52	47.76	46.02	45.60	42.71	42.19
25	52.80	51.05	49.33	47.92	45.70	45.65	44.93	43.28	41.78	41.60	38.79	38.52
30	48.13	46.34	44.71	43.31	41.07	40.97	40.29	38.80	37.54	37.65	34.87	34.88
35	43.47	41.64	40.12	38.66	36.43	36.31	35.68	34.36	33.33	33.74	31.08	31.29
40	38.83	37.01	35.57	34.04	31.87	31.73	31.17	30.03	29.22	29.86	27.43	27.74
45	34.26	32.49	31.07	29.55	27.48	27.34	26.87	25.87	25.28	26.00	23.86	24.21
50	29.86	28.12	26.71	25.26	23.34	23.22	22.83	21.96	21.51	22.22	20.39	20.76
55	25.69	23.88	22.56	21.25	19.51	19.45	19.11	18.34	17.97	18.59	17.03	17.42
60	21.74	19.90	18.71	17.56	16.07	16.01	15.76	15.05	14.72	15.25	13.98	14.35
65	17.97	16.22	15.24	14.26	13.02	12.97	12.75	12.07	11.77	12.21	11.25	11.51
70	14.40	12.87	12.11	11.35	10.38	10.29	10.07	9.42	9.20	9.51	8.83	9.03
75	11.14	9.92	9.40	8.87	8.06	7.92	7.77	7.17	7.02	7.30	6.75	6.84
80	8.26	7.43	7.11	6.76	6.18	5.89	5.88	5.38	5.26	5.47	5.09	5.10
85	5.86	5.43	5.28	5.09	4.63	4.34	4.35	4.02	3.99	4.06	3.88	3.81
90	4.02	3.90	3.85	3.83	3.49	3.16	3.27	3.06	3.03	3.18	2.99	2.85
95	2.78	2.77	2.88	2.91	2.67	2.43	2.48	2.40	2.19	2.36	2.31	2.12
100	2.00	1.98	2.21	2.41	2.20	1.91	1.92	1.96	1.49	1.58	1.68	1.55

See footnotes at end of table.

Table 21. Life expectancy, by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2013—Con.

[Includes Alaska and Hawaii beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and District of Columbia; and 1919–1921, 34 states and District of Columbia. Beginning in 1970, excludes deaths of nonresidents of the United States; see Technical Notes]

Age (years), race, and sex	Average number of years of life remaining, e_x											
	2013	1999–2001	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
White female												
0	81.36	79.99	79.45	78.22	75.49	74.19	72.03	67.29	62.67	58.53	53.62	51.08
1	80.73	79.40	78.99	77.98	75.66	74.68	72.77	68.93	64.93	61.51	58.69	56.39
5	76.79	75.48	75.10	74.13	71.86	70.92	69.09	65.57	62.17	59.43	57.67	56.03
10	71.83	70.53	70.16	69.21	66.97	66.05	64.26	60.85	57.65	55.17	53.57	52.15
15	66.87	65.58	65.23	64.29	62.07	61.15	59.39	56.07	53.00	50.67	49.12	47.79
20	61.96	60.70	60.36	59.44	57.24	56.29	54.56	51.38	48.52	46.46	44.88	43.77
25	57.09	55.83	55.51	54.60	52.42	51.45	49.77	46.78	44.25	42.55	40.88	40.05
30	52.24	50.95	50.65	49.76	47.60	46.63	45.00	42.21	39.99	38.72	36.96	36.42
35	47.42	46.11	45.82	44.93	42.82	41.84	40.28	37.70	35.73	34.86	33.09	32.82
40	42.65	41.33	41.03	40.16	38.12	37.13	35.64	33.25	31.52	30.94	29.26	29.17
45	37.95	36.62	36.30	35.49	33.54	32.53	31.12	28.90	27.39	26.98	25.45	25.51
50	33.37	32.01	31.71	30.96	29.11	28.08	26.76	24.72	23.41	23.12	21.74	21.89
55	28.93	27.53	27.29	26.61	24.85	23.81	22.58	20.73	19.60	19.40	18.18	18.43
60	24.63	23.25	23.09	22.45	20.79	19.69	18.64	17.00	16.05	15.93	14.92	15.23
65	20.46	19.23	19.14	18.55	16.93	15.88	15.00	13.56	12.81	12.75	11.97	12.23
70	16.53	15.47	15.46	14.89	13.37	12.38	11.68	10.50	9.98	9.94	9.38	9.59
75	12.90	12.02	12.11	11.58	10.21	9.28	8.87	7.92	7.56	7.62	7.20	7.33
80	9.66	9.04	9.12	8.65	7.59	6.67	6.59	5.88	5.63	5.70	5.35	5.50
85	6.90	6.59	6.62	6.32	5.54	4.66	4.83	4.34	4.24	4.24	4.06	4.10
90	4.74	4.67	4.69	4.59	4.05	3.23	3.51	3.24	3.17	3.16	3.00	3.02
95	3.22	3.24	3.36	3.39	3.04	2.43	2.56	2.47	2.24	2.20	2.27	2.21
100	2.25	2.24	2.49	2.70	2.49	1.91	1.92	1.95	1.48	1.42	1.74	1.58
Black¹												
0	75.51	71.81	69.16	68.52	64.11	63.91	60.73	53.85	48.53	47.03	35.87	33.80
1	75.37	71.84	69.43	68.99	65.27	65.75	62.65	57.15	51.71	51.01	43.84	43.00
5	71.48	67.98	65.64	65.25	61.62	62.21	59.25	54.13	49.25	49.44	45.34	45.55
10	66.54	63.05	60.75	60.38	56.79	57.41	54.50	49.50	44.80	45.26	41.74	42.46
15	61.59	58.13	55.86	55.49	51.94	52.57	49.73	44.89	40.37	41.02	38.02	39.04
20	56.77	53.38	51.19	50.75	47.34	47.88	45.19	40.73	36.62	37.72	34.86	36.03
25	52.08	48.78	46.67	46.18	43.00	43.35	40.85	36.91	33.32	34.91	31.72	33.04
30	47.43	44.16	42.22	41.69	38.70	38.89	36.59	33.17	30.07	31.98	28.43	29.96
35	42.81	39.59	37.87	37.28	34.48	34.56	32.44	29.53	26.94	29.07	25.39	26.82
40	38.23	35.12	33.65	32.98	30.46	30.39	28.48	26.06	23.82	26.07	22.41	23.73
45	33.73	30.84	29.55	28.87	26.65	26.46	24.75	22.82	20.97	23.17	19.58	20.67
50	29.42	26.80	25.62	25.03	23.11	22.74	21.38	19.94	18.22	20.17	16.84	17.95
55	25.35	22.97	21.95	21.50	19.83	19.45	18.41	17.43	15.80	17.33	14.33	15.23
60	21.59	19.43	18.59	18.29	16.83	16.53	15.87	15.18	13.62	14.72	12.16	13.06
65	18.11	16.14	15.56	15.37	14.16	13.96	13.59	13.02	11.49	12.22	10.22	10.87
70	14.80	13.18	12.87	12.67	11.77	11.63	11.48	10.93	9.54	9.90	8.59	8.96
75	11.78	10.54	10.48	10.32	9.89	9.52	9.48	8.97	7.84	8.00	7.08	7.24
80	9.09	8.29	8.30	8.17	8.20	7.28	7.62	7.31	6.19	6.22	5.80	5.79
85	6.84	6.41	6.51	6.54	6.54	5.27	5.79	5.91	4.92	4.88	4.80	4.56
90	5.11	4.90	4.94	5.13	5.09	3.48	3.97	4.64	3.83	3.84	4.26	3.60
95	3.80	3.71	3.82	4.08	4.28	2.43	2.70	3.51	2.83	2.90	3.31	2.82
100	2.86	2.81	2.91	3.58	3.93	1.91	1.94	2.57	1.87	1.94	2.27	2.18
Black male¹												
0	72.33	68.17	64.47	64.10	60.00	61.48	58.91	52.26	47.55	47.14	34.05	32.54
1	72.21	68.25	64.76	64.60	61.24	63.50	61.06	55.93	51.08	51.63	42.53	42.46
5	68.32	64.40	60.98	60.86	57.60	59.98	57.69	52.95	48.69	50.18	44.25	45.06
10	63.38	59.48	56.09	56.01	52.79	55.19	52.96	48.34	44.27	45.99	40.65	41.90
15	58.45	54.57	51.22	51.14	47.96	50.39	48.23	43.74	39.83	41.75	36.77	38.26
20	53.71	49.92	46.71	46.48	43.49	45.78	43.73	39.52	35.95	38.36	33.46	35.11
25	49.15	45.50	42.40	42.09	39.45	41.38	39.49	35.72	32.67	35.54	30.44	32.21
30	44.64	41.02	38.14	37.81	35.40	37.05	35.31	32.05	29.45	32.51	27.33	29.25
35	40.13	36.56	34.02	33.60	31.42	32.81	31.21	28.48	26.39	29.54	24.42	26.16
40	35.64	32.18	30.05	29.51	27.61	28.72	27.29	25.06	23.36	26.53	21.57	23.12
45	31.23	28.01	26.18	25.61	24.03	24.89	23.59	21.88	20.59	23.55	18.85	20.09

See footnotes at end of table.

Table 21. Life expectancy, by age, race, and sex: Death-registration states, 1900–1902 to 1919–1921, and United States, 1929–1931 to 2013—Con.

[Includes Alaska and Hawaii beginning in 1959. For decennial periods prior to 1929–1931, data are for groups of registration states as follows: 1900–1902 and 1909–1911, 10 states and District of Columbia; and 1919–1921, 34 states and District of Columbia. Beginning in 1970, excludes deaths of nonresidents of the United States; see Technical Notes]

Age (years), race, and sex	Average number of years of life remaining, e_x											
	2013	1999–2001	1989–1991	1979–1981	1969–1971	1959–1961	1949–1951	1939–1941	1929–1931	1919–1921	1909–1911	1900–1902
Black male¹—Con.												
50	27.00	24.13	22.50	22.03	20.69	21.28	20.25	19.06	17.92	20.47	16.21	17.34
55	23.02	20.50	19.08	18.79	17.66	18.11	17.36	16.60	15.46	17.50	13.82	14.69
60	19.45	17.19	16.01	15.89	14.93	15.29	14.91	14.37	13.15	14.74	11.67	12.62
65	16.24	14.12	13.27	13.29	12.53	12.84	12.75	12.21	10.87	12.07	9.74	10.38
70	13.17	11.40	10.88	10.94	10.40	10.81	10.74	10.11	8.78	9.58	8.00	8.33
75	10.42	9.07	8.84	8.90	8.76	8.93	8.83	8.17	6.99	7.61	6.58	6.60
80	8.00	7.12	7.01	7.03	7.35	6.87	7.07	6.58	5.42	5.83	5.53	5.12
85	5.96	5.52	5.58	5.61	5.92	5.08	5.38	5.34	4.30	4.53	4.48	4.04
90	4.40	4.23	4.24	4.47	4.68	3.42	3.78	4.23	3.42	3.60	4.01	3.21
95	3.25	3.24	3.37	3.62	3.92	2.43	2.64	3.20	2.54	2.61	3.15	2.50
100	2.45	2.48	2.63	3.24	3.61	1.91	1.93	2.29	1.68	1.64	2.14	1.89
Black female¹												
0	78.41	75.16	73.73	72.88	68.32	66.47	62.70	55.56	49.51	46.92	37.67	35.04
1	78.23	75.13	73.96	73.31	69.37	68.10	64.37	58.46	52.33	50.39	45.15	43.54
5	74.33	71.26	70.16	69.54	65.70	64.54	60.93	55.40	49.81	48.70	46.42	46.04
10	69.39	66.32	65.26	64.65	60.85	59.72	56.17	50.75	45.33	44.54	42.84	43.02
15	64.44	61.39	60.34	59.74	55.97	54.85	51.36	46.13	40.87	40.36	39.18	39.79
20	59.52	56.52	55.49	54.90	51.22	50.07	46.77	42.04	37.22	37.15	36.14	36.89
25	54.67	51.71	50.72	50.13	46.57	45.40	42.35	38.20	33.93	34.35	32.97	33.90
30	49.88	46.95	46.03	45.43	42.00	40.83	38.02	34.40	30.67	31.48	29.61	30.70
35	45.13	42.26	41.45	40.79	37.56	36.41	33.82	30.83	27.47	28.58	26.44	27.52
40	40.45	37.69	36.96	36.28	33.32	32.16	29.82	27.19	24.30	25.60	23.34	24.37
45	35.87	33.29	32.58	31.94	29.31	28.14	26.07	23.89	21.39	22.61	20.43	21.36
50	31.46	29.06	28.38	27.84	25.52	24.31	22.67	20.95	18.60	19.76	17.65	18.67
55	27.27	25.01	24.41	24.00	21.97	20.89	19.62	18.38	16.27	17.09	14.98	15.88
60	23.30	21.20	20.71	20.42	18.66	17.83	16.95	16.10	14.22	14.69	12.78	13.60
65	19.53	17.65	17.37	17.13	15.67	15.12	14.54	13.95	12.24	12.41	10.82	11.38
70	15.95	14.41	14.32	14.05	13.02	12.46	12.29	11.82	10.38	10.25	9.22	9.62
75	12.66	11.49	11.56	11.37	10.85	10.10	10.15	9.81	8.62	8.37	7.55	7.90
80	9.69	8.96	9.05	8.95	8.87	7.66	8.15	8.02	6.90	6.58	6.05	6.48
85	7.22	6.86	6.99	7.09	7.00	5.44	6.15	6.41	5.48	5.22	5.09	5.10
90	5.29	5.16	5.24	5.47	5.41	3.52	4.13	4.96	4.20	4.07	4.50	4.01
95	3.85	3.84	3.97	4.30	4.58	2.43	2.74	3.71	3.09	3.18	3.45	3.15
100	2.83	2.84	2.97	3.69	4.20	1.91	1.94	2.70	2.04	2.23	2.39	2.49

¹For 1939–1941 and 1949–1951, data shown are for the entire nonwhite population. During these periods, life tables were not constructed for the black population. See Technical Notes.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Technical Notes

The life table program

Three series of complete life tables for the U.S. population are prepared by the National Center for Health Statistics (NCHS). *Decennial life tables* are based on decennial U.S. census data and final deaths for a 3-year period around the census year. *Annual preliminary life tables* are based on a sample of approximately 90% of death records. Annual final life tables (referred to here as “annual life tables”) are based on a complete count of all reported deaths.

Available since 1945, the annual life tables are based on deaths occurring during the calendar year and on midyear postcensal population estimates provided by the U.S. Census Bureau. From 1945 to 1996, the annual life tables were abridged life tables, closed at age 85 and over, and were constructed by reference to a standard table (4). Beginning with 1997 mortality data, a new methodology similar to that of the 1989–1991 decennial life tables was employed to estimate annual complete life tables to age 100, with combined life table values presented for ages 100 and over (9). The methodology was again revised for data years 2000–2007 using a methodology similar to that of the 1999–2001 decennial life tables (10). Beginning with data year 2008, the life table methodology was refined by changing the smoothing technique used to estimate the life table functions at the oldest ages (11).

The methodology used to estimate the 2008–2013 life tables is different from that used to estimate the 2000–2007 life tables with respect to the technique used to estimate the probabilities of death for ages over 65. The methodology used to produce the life tables for 2008–2013 does not model the probabilities of death beginning at age 66, as was done for data years 2000–2007, but rather at ages above 85 or so. (The exact ages at which smoothing techniques are used depends on the specific racial and ethnic population.) Research into the methodology developed and used for the 1999–2001 decennial life tables and applied to the annual life tables has revealed that it is not necessary to model (or “smooth”) the probabilities of death beginning at age 66. The observed blended vital statistics and Medicare data for ages 66–85 are robust enough and do not require additional smoothing (11). A full description of the methodology used to estimate the 2013 life tables is provided below. See “United States Life Tables, 2005” (10) for a detailed description of the methodology used for data years 2000–2007.

Beginning with 2006 mortality data, life tables by Hispanic origin were added to the annual life table program. Prior to this time, concerns about data limitations such as racial and ethnic misclassification on U.S. death certificates and lack of Medicare data for older populations other than the white and black populations prevented the estimation of life tables for the Hispanic-origin population. Recent research that identified and quantified these data limitations has led to the development of reliable methodological strategies to address these data problems (5,12–14). The methodology developed to estimate life tables for the Hispanic and non-Hispanic white and black populations is described in detail below and in “United States Life Tables by Hispanic Origin” (12).

Geographic coverage

The geographic areas covered in life tables before 1929–1931 were limited to death-registration areas. Life tables for 1900–1902 and 1909–1911 were constructed using mortality data from the 1900 death-registration states (10 states and the District of Columbia), and tables for 1919–1921 used mortality data from the 1920 death-registration states (34 states and the District of Columbia). The tables for 1929–1931 through 1958 cover the coterminous United States. Decennial life table values for the 3-year period 1959–1961 were derived from data that include both Alaska and Hawaii for each year (Tables 20 and 21). Data for each year shown in Table 19 include Alaska beginning in 1959 and Hawaii beginning in 1960. However, it is believed that the inclusion of these two states does not materially affect life table values.

Revised intercensal life table values

Life table values for 1960–1969, 1970–1979, and 1980–1989 were constructed using the U.S. decennial life tables for 1959–1961, 1969–1971, and 1979–1981, respectively, as the standard tables. The life table values for years prior to 1989 appearing in this report are based on revised intercensal estimates of the populations for those years. As a result, the life table values for these years may differ from the life table values for those years published in “Vital Statistics of the United States” for 1989 and earlier years (available from: <https://www.cdc.gov/nchs/products/vsus.htm>). Life table values for 1991–1999 presented in this report are based on postcensal population estimates of the population enumerated in the 1990 decennial census. Life table values for 2001–2009 presented in this report are based on revised intercensal population estimates based on the 2010 decennial census and the revised methodology used to estimate the 2008–2013 life tables. As a result, the values may differ from those previously published in annual final mortality and life table reports (15).

New Jersey data, 1962–1964

The life tables for 1962 and 1963 for the six population groups involving race do not include data from New Jersey, which omitted the item on race from its certificates of live birth, death, and fetal death in use at the beginning of 1962. The item was restored during the latter part of 1962. However, the certificate revision without this item was used for most of 1962, as well as for 1963. For computing vital rates, populations by age, race, and sex (excluding New Jersey) were estimated to obtain comparable denominators. Approximately 7% of the New Jersey death records for 1964 did not contain the race designation. When the records were being electronically processed for this state, the “race not stated” deaths were allocated proportionally to white or to black.

Nonresidents

Beginning in 1970, the deaths of nonresidents of the United States have been excluded from the life table statistics.

Estimation of life table functions

For some years, it was necessary to estimate life table functions for some race-sex groups. In Tables 20 and 21, values for the black

population during the periods 1939–1941 and 1949–1951 were estimated using values for the nonwhite population. Life table functions were also missing in [Tables 20](#) and [21](#) for some race-sex groups for the periods from 1900–1902 to 1939–1941. Values were missing for the following groups:

<i>Years</i>	<i>Race and sex</i>
1900–1902	Total white, total black
1909–1911	Total white, total black
1919–1921	Total, male, female, total white, total black
1929–1931	Total, male, female, total white, total black

These missing values were estimated by weighted averages using population distributions as the weights. For example, life expectancy at age 20 for the total black population was estimated by a weighted average of black male and black female life expectancies at age 20, using as weights the population distribution by sex of the black population aged 20.

Annual life tables were initiated in 1945 for white males, white females, all other males, and all other females. The values in [Table 19](#) by race and sex for the following years were estimated using a procedure other than the abridged life table methodology (16):

<i>Years</i>	<i>Race and sex</i>
1900–1945	Total
1900–1947	Male
1900–1947	Female
1900–1950	White
1900–1944	White male
1900–1944	White female

Annual life table functions were not calculated for the black population prior to 1970. In [Table 19](#), life expectancy for the black population for years prior to 1970 was estimated using values for the total nonwhite population.

Data for calculating life table functions

The data used to prepare the U.S. life tables include final death counts from the National Vital Statistics System (NVSS), population estimates from the U.S. Census Bureau, and death and population counts for Medicare beneficiaries aged 66–99 from the Centers for Medicare & Medicaid Services (CMS).

Vital statistics data

Death counts used for computing the life tables presented in this report are final numbers of deaths for 2013 collected from death certificates filed in state vital statistics offices and reported to NCHS as part of NVSS. Race and Hispanic origin are reported separately on the death certificate.

The U.S. Standard Certificate of Death was revised in 2003, and its race and Hispanic-origin items reflect the mandate of the 1997 Office of Management and Budget (OMB) standards (17). This revision allowed individuals to report more than one race and increased the race choices from four to five by separating the Asian and Pacific Islander groups. In 2013, 41 states and the District of Columbia had adopted the 1997 OMB standards, while 9 others continued to

collect race and ethnicity data according to the 1977 OMB standards (6,18). To attain uniformity and comparability during the transition period until all states implement the 1997 standards, multiple-race responses are "bridged" to the 1977 single-race standard, and Asian and Pacific Islander groups are combined according to the 1977 standards. The bridging procedure is the same as that used to bridge multiple-race population estimates, as discussed below (19).

Census population data

The population data used to estimate the life tables shown in this report were produced under a collaborative agreement with the U.S. Census Bureau and are consistent with the postcensal estimates of the 2010 census. Reflecting the 1997 OMB guidelines on race and ethnicity reporting (17), the 2010 census included an option for individuals to report more than one race and provided for the reporting of Asian persons separately from Native Hawaiian or other Pacific Islander persons. Death certificate data by race for states that have not yet implemented the 1997 OMB standards are thus currently incompatible with the population data collected in the 2010 census (the denominators for the rates). To produce death rates for 2013, it was necessary to bridge the reported population data for multiple-race persons back to single-race categories. In addition, the 2010 census counts were modified to be consistent with the 1977 OMB race categories, that is, to report the data for Asian persons and Native Hawaiian or other Pacific Islander persons as a combined category (Asian or Pacific Islander) and to reflect age as of the census reference date (20). The procedures used to produce the bridged populations are described elsewhere (19).

Medicare data

Medicare data have traditionally been employed in the estimation of U.S. decennial life tables, and in the estimation of U.S. annual life tables since 1997 (9). Medicare data are considered to be more accurate than vital statistics and census data at the oldest ages because Medicare enrollees must have proof of age in order to enroll (21). However, the reliability of Medicare data beyond age 100 declines because of the small percentage of persons who enrolled at the start of the Medicare program in 1965 and for whom it was not possible to verify exact age (21). Further, the Medicare race and ethnicity classification system makes it impossible to correctly identify the Hispanic, American Indian or Alaska Native, and Asian or Pacific Islander populations (12,22). It is, however, possible to use Medicare data to estimate old-age mortality for both the white and black race groups, irrespective of Hispanic origin, as has been done traditionally, and to estimate old-age mortality for the non-Hispanic segments of these populations (12). As a result, data from the Medicare program are used to supplement vital statistics and census data for ages 66–99 for the total population and for the white, black, non-Hispanic white, and non-Hispanic black populations (12).

To estimate death rates for the Medicare white, black, non-Hispanic white, and non-Hispanic black populations in 2013, age-specific numbers of deaths and population counts by sex and race for the population aged 66–99 from the 2015 and 2016 Medicare files were used. The data files are created by CMS for the Social Security Administration, which shares the files with NCHS under a special agreement. The 2015 file contains final Medicare population counts

as of January 1, 2013, and the 2016 file contains final Medicare population counts as of January 1, 2014 and final 2013 Medicare death counts. Medicare death data are reported on a calendar year age basis, by subtracting the year of birth from the year of death. As a result, for a given reporting year, deaths reported as age x are on average exact age $x - 1/2$ as of January 1 of the reporting year. Medicare enrollment (population) data are reported on an age-at-last-birthday basis. As a result, persons with reported age x as of January 1 of the reporting year are on average exact age $x + 1/2$.

Preliminary adjustment of the data

Adjustment for unknown age

An adjustment is made to account for the small proportion of deaths each year for which age is not reported on the death certificate. The number of deaths in each age category is adjusted proportionally to account for those with not-stated ages. The following factor (F) is used to make the adjustment. F is calculated for the total and for each sex group within a racial and ethnic population for which life tables are constructed:

$$F = \frac{D}{D^a} \quad [1]$$

where D is the total number of deaths and D^a is the total number of deaths for which age is stated. F is then applied by multiplying it by the number of deaths in each age group. Table I shows values for F by sex used to adjust mortality data for the total, white, black, Hispanic, non-Hispanic white, and non-Hispanic black populations in 2013.

Adjustment for misclassification of race and Hispanic origin on death certificates

The latest research to evaluate race and Hispanic-origin reporting on U.S. death certificates found that the misclassification of race and Hispanic origin on death certificates in the United States accounts for a net underestimate of 3% for total Hispanic deaths, a net underestimate of less than one-half percent for total non-Hispanic black deaths, and no under- or overestimate for total non-Hispanic white deaths or for the population racially classified as white or black, irrespective of Hispanic origin (5). These results are based on a comparison of self-reported race and Hispanic origin on Current Population Surveys (CPS) with race and Hispanic origin reported on the death certificates of a sample of decedents in the National Longitudinal Mortality Study (NLMS) who died during the period 1999–2011 (5).

NLMS-linked records are used to estimate sex-age-specific ratios of CPS race and Hispanic-origin counts to death certificate counts (5,13,14). The CPS/death certificate ratio, or "classification ratio," is specifically the ratio of the weighted count of self-reported race and ethnicity on the CPS to the weighted count of the same racial or ethnic category on the death certificates of the sample of NLMS decedents described above. It can be interpreted as the net difference in assignment of a specific race and Hispanic-origin category between the two classification systems and can be used as a correction factor for race and Hispanic-origin misclassification

Table I. Values for F used to adjust for not-stated age based on 2013 mortality data

Race, Hispanic origin, and sex	Total deaths	Total deaths for which age was not stated	F
Total	2,596,993	132	1.00005083
Male	1,306,034	95	1.00007274
Female	1,290,959	37	1.00002866
White	2,217,103	101	1.00004556
Male	1,110,956	75	1.00006751
Female	1,106,147	26	1.00002351
Black	302,969	26	1.00008582
Male	154,767	17	1.00010985
Female	148,202	9	1.00006073
Hispanic	163,241	7	1.00004288
Male	88,880	6	1.00006751
Female	74,361	1	1.00001345
Non-Hispanic white	2,052,660	50	1.00002436
Male	1,021,135	35	1.00003428
Female	1,031,525	15	1.00001454
Non-Hispanic black	299,227	20	1.00006684
Male	152,661	13	1.00008516
Female	146,566	7	1.00004776

SOURCE: NCHS, National Vital Statistics System, Mortality.

(5,13,14). The assumption is made that the race and ethnicity reported by a CPS respondent is more reliable than proxy reporting of race and ethnicity by a funeral director who has little personal knowledge of the decedent. Further, public policy embodied in the 1997 OMB standard mandates that self-identification should be the standard used for the collection and recording of race and ethnicity information (17).

The NLMS-based classification ratios discussed above are used to adjust the age-specific number of deaths for ages 1–95 and over for the total Hispanic, non-Hispanic white, and non-Hispanic black populations, and by sex for each group, as follows:

$${}_nD_x = {}_nD_x^F \cdot {}_nCR_x \quad [2]$$

where ${}_nD_x^F$ is the age-specific number of deaths adjusted for unknown age as described above, ${}_nCR_x$ are the sex- and age-specific classification ratios used to correct for the misclassification of race and Hispanic origin on death certificates, and ${}_nD_x$ are the final age-specific counts of deaths adjusted for age and race and Hispanic-origin misclassification. Table II shows values of the sex- and age-specific classification ratios, ${}_nCR_x$, by Hispanic origin and race for the non-Hispanic population (black and white).

Because NLMS classification ratios for infant deaths are unreliable due to small sample sizes, corrections for racial and ethnic misclassification of infant deaths are addressed by using infant death counts and live birth counts from the 2012 and 2013 linked birth/infant death data files rather than the traditional birth and death data files (23,24). In the linked file, each infant death record is linked to its corresponding birth record so that the race and ethnicity reported on the birth record can be ascribed to the infant death record. As a result, race- and ethnicity-specific infant mortality rates estimated

Table II. Classification ratios, by Hispanic origin, race for the non-Hispanic white and black populations, age, and sex

Age (years)	Hispanic			Non-Hispanic white			Non-Hispanic black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All ages	1.0329	1.0362	1.0294	0.9995	0.9993	0.9997	1.0047	1.0041	1.0053
0 ¹	1.0546	1.0539	1.0565	0.9804	0.9827	0.9773	1.0454	1.0422	1.0486
1–14	0.9905	0.9659	*1.0299	0.9918	1.0755	0.8770	1.0266	0.9379	*1.1751
15–24	0.9668	0.9325	1.0604	0.9976	1.0019	0.9869	1.0248	1.0215	1.0343
25–34	1.0354	1.0401	1.0232	1.0021	1.0034	0.9994	0.9855	0.9770	1.0008
35–44	1.0434	1.0645	1.0066	0.9980	0.9997	0.9951	1.0062	1.0073	1.0048
45–54	1.0584	1.0372	1.0953	0.9969	0.9965	0.9976	1.0002	1.0019	0.9982
55–64	1.0571	1.0517	1.0659	0.9994	0.9992	0.9997	1.0003	0.9965	1.0046
65–74	1.0295	1.0485	1.0072	0.9967	0.9967	0.9966	1.0062	1.0055	1.0070
75–84	1.0192	1.0188	1.0196	1.0004	1.0003	1.0004	1.0057	1.0057	1.0058
85–94	1.0208	1.0313	1.0137	1.0008	1.0007	1.0009	1.0110	1.0155	1.0086
95 and over	1.0732	1.0509	1.0842	1.0005	0.9995	1.0008	0.9980	0.9872	0.9954

* Ratio is unreliable because either the unweighted number of Current Population Survey deaths, the unweighted number of death certificate deaths, or both are based on fewer than 20 deaths.

¹Ratios for age 0 are estimated as the ratio of infant mortality rates based on the traditional death and birth files to the infant mortality rates based on the 2013 linked birth/infant death data file. They are only shown for illustrative purposes; see text for details.

SOURCE: NCHS, National Vital Statistics System, Mortality.

with the linked file do not suffer from the problem of racial and ethnic discrepancies between the numerator and denominator of the rate. A ratio of infant mortality rates based on the traditional birth and death data files to infant mortality rates based on the linked birth/infant death data file shows that using the traditional files overestimates the infant mortality rate by 5% for Hispanic and 4% for non-Hispanic black infants, and underestimates the rate by 2% for non-Hispanic white infants (see ratios for age 0 in Table II). Because the probability of death at age 0 used to calculate the life table uses live births in the denominator (procedure described below), it is preferable to use the linked birth/infant death data file.

Note that although there is no conclusive evidence supporting return migration as a factor in the lower mortality of the Hispanic population, the possibility remains that Hispanic deaths are missed in NVSS due to return migration, and therefore the resulting death rates may be biased irrespective of correction for ethnic misclassification (12,25).

Interpolation of P_x and D_x

Anomalies—both random and those associated with reporting age at death—can be problematic when using vital statistics and census data by single years of age to estimate the probability of death (1,9). Graduation techniques are often used to eliminate these anomalies and to derive a smooth curve by age. Beers' ordinary minimized fifth difference formula is used to obtain smoothed values of population counts (P_x) and death counts (D_x) from 5-year age groupings of ${}_nP_x$ from age 0 to 99 and ${}_nD_x$ from age 5 to 99, and where ${}_nD_x$ has first been adjusted for not-reported age and race and Hispanic-origin misclassification on the death certificate (see reference 9 for details on the application of the Beers method).

Calculation of the probability of dying (q_x)

The first step in the calculation of a complete period life table is the estimation of the age-specific probability of dying, q_x , which is derived from the age-specific death rate, m_x (3,26). In the life table cohort,

$$m_x = \frac{d_x}{L_x},$$

where d_x is the number of deaths occurring between ages x and $x + 1$, and L_x is the number of person-years lived by the life table cohort between ages x and $x + 1$. The conversion of the age-specific death rate, m_x , to the age-specific probability of death, q_x , is as follows:

$$q_x = \frac{m_x}{1 + (1 - a_x)m_x} \quad [3]$$

where a_x is the number of person-years lived in the age interval by members of the life table cohort who died in the interval. When the age interval is 1 year, except at infancy, $a_x = 1/2$; in other words, deaths occur on average midway through the age interval. As a result,

$$q_x = \frac{m_x}{1 + \frac{1}{2}m_x} \quad [4]$$

Because the complete period life table is based on the age-specific death rates of a current population observed for a specific calendar year, the life table death rate is equivalent to the observed death rates of the current population:

$$m_x = \frac{d_x}{L_x} = M_x = \frac{D_x}{P_x}$$

where D_x is the Beers smoothed number of deaths adjusted for not-stated age and race and Hispanic-origin misclassification on the death certificate (for the Hispanic, non-Hispanic white, and non-Hispanic black populations), and P_x is the Beers smoothed population at risk of dying between ages x and $x + 1$. Then,

$$q_x = \frac{M_x}{1 + \frac{1}{2}M_x} = \frac{D_x}{P_x + \frac{1}{2}D_x} \quad [5]$$

This procedure is used to estimate vital statistics age-specific probabilities of death for ages 1–99.

Calculation of q_x at age 0

The higher mortality observed in infancy is associated with a high concentration of deaths occurring at the beginning of the age interval rather than in the middle. As a result, whenever possible, it is best to assign deaths to the appropriate birth cohorts. Therefore, the probability of death at birth, q_0 , is calculated using a birth cohort method that employs a separation factor (f) defined as the proportion of infant deaths in year t occurring to infants born in the previous year ($t - 1$). The value f is estimated by categorizing infant deaths by date of birth. The probability of death is then calculated as

$$q_0 = \frac{D_0(1-f)}{B^t} + \frac{D_0(f)}{B^{t-1}} \quad [6]$$

where D_0 is the number of infant deaths adjusted for not-stated age in 2013, B^t is the number of live births in 2013, and B^{t-1} is the number of live births in 2012. Table III shows separation factors and numbers of births for 2012–2013.

Probabilities of dying at the oldest ages for the total, white, black, non-Hispanic white, and non-Hispanic black populations

Medicare data are used to supplement vital statistics data for the estimation of q_x at the oldest ages because these data are more accurate given that proof of age is required for enrollment in the Medicare program. Medicare data are used here to estimate the probability of dying at ages 66 and over for the total, white, black, non-Hispanic white, and non-Hispanic black populations.

The method described in this section consists of the following steps. First, vital statistics and Medicare death rates are blended in the age range 66–99. Second, a logistic model is used to smooth the blended death rates in the age range 85–99 and to predict death rates for ages 100–120. Third, final resulting death rates, M_x , are converted to q_x .

For ages 66–94, vital statistics death rates, M_x^V , and Medicare death rates, M_x^M , are blended with a weighting process that gives gradually declining weight to vital statistics data and gradually increasing weight to Medicare data. For ages 95–99, M_x^M is used exclusively. Blended M_x is thus obtained as follows:

$$M_x = \frac{1}{30} [(95-x)M_x^V + (x-65)M_x^M]$$

when $x = 66, \dots, 94$

$$\text{and } M_x = M_x^M$$

when $x = 95, \dots, 99$.

[7]

Because of the manner in which age is reported in Medicare death and enrollment data as of January 1 of the reporting year, Medicare death rates are in one-half years of age. As a result, M_x^M is estimated as follows:

$$M_x^M = \left[M_{x-\frac{1}{2}}^M + M_{x+\frac{1}{2}}^M \right] / 2,$$

$$\text{where } M_{x-\frac{1}{2}}^M = \frac{D_{y,x}}{[P_{y,x-1} + P_{y+1,x}]/2},$$

$$M_{x+\frac{1}{2}}^M = \frac{D_{y,x+1}}{[P_{y,x} + P_{y+1,x+1}]/2},$$

and $D_{y,x}$ is the number of Medicare deaths at age x , year y , where deaths occur on average to those age $x - 1/2$ as of January 1; $P_{y,x-1}$ is the Medicare population count with reported age $x - 1$ on January 1, year y ; and $P_{y+1,x}$ is the Medicare population count with reported age x on January 1, year $y + 1$.

A logistic model proposed by Kannisto is then used to smooth M_x in the age range 85–99 and predict M_x in the age range 100–120 (27). The start of the modeled age range varies by race- and ethnicity-specific population because it is a function of the age at which the rate of change in the age-specific death rates peaks. In current times, the rate of change in the age-specific death rate rises steadily up to approximately ages 80–85 or so and then begins to decline. As a result, it is difficult to model a large age span, such as 65–100, with one simple model without over smoothing and thus altering the underlying mortality pattern observed in the population of interest (28). Further, the observed data for the age range 65–85 or so is reliable and robust, as indicated by the very close similarity between vital statistics and Medicare death rates, so it is unnecessary to model (smooth) the entire age span (65–100).

The Kannisto model is a simple form of a logistic model in which the logit of u_x (or the natural log of the odds of u_x) is a linear function of age, x (27). It is expressed as:

$$\ln \left[\frac{u_x}{1-u_x} \right] = \ln(\alpha) + \beta x \quad [8]$$

where u_x , the force of mortality (or the instantaneous death rate), is defined as:

$$u_x = \frac{\alpha e^{\beta x}}{1 + \alpha e^{\beta x}}$$

Because u_x is not directly observed but is closely approximated by m_x , and $m_x = M_x$, then the logit of M_x is modeled instead. A maximum-likelihood generalized linear model estimation procedure is used to fit the following model in the age range 85–99:

$$\ln \left[\frac{M_x}{1-M_x} \right] = \ln(\alpha) + \beta x \quad [9]$$

Then, the estimated parameters are used to predict \bar{M}_x as follows:

$$\bar{M}_x = \frac{e^a e^{bx}}{1 + e^a e^{bx}}, \text{ or equivalently, } \bar{M}_x = \frac{e^{a+bx}}{1 + e^{a+bx}} \quad [10]$$

where a and b are the predicted values of parameters $\ln(\alpha)$ and β , respectively, given by fitting model [9]. Estimated parameters and the starting age for the modeled age span by population in 2013 are presented in Table IV.

Finally, the predicted probability of death, \bar{q}_x , for ages 85–120 is estimated by converting \bar{M}_x as follows:

$$\bar{q}_x = \frac{\bar{M}_x}{1 + \frac{1}{2} \bar{M}_x} \quad [11]$$

Table III. Births in 2012 and 2013, deaths in 2013 of infants born in 2012 and 2013, and separation factors, by race, Hispanic origin, and sex: United States

Births, deaths, and separation factors	Total			White			Black			Hispanic			Non-Hispanic white			Non-Hispanic black		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Births:																		
2012	3,952,841	2,021,434	1,931,407	2,999,820	1,535,177	1,464,643	634,126	322,164	311,962	907,677	461,893	445,784	2,134,044	1,094,469	1,039,575	583,489	296,354	287,135
2013	3,932,181	2,012,954	1,919,227	2,985,757	1,529,972	1,455,785	634,760	322,365	312,395	901,033	459,931	441,102	2,129,196	1,092,625	1,036,571	583,834	296,426	287,408
Deaths in 2013 of infants born in:																		
2012	2,766	1,587	1,187	1,755	1,026	730	869	473	396	469	257	214	1,313	781	536	798	440	359
2013	20,674	11,532	9,134	13,371	7,522	5,847	6,254	3,405	2,849	4,038	2,210	1,826	9,453	5,366	4,083	5,690	3,108	2,580
Separation factor, <i>f</i>	0.118	0.121	0.115	0.116	0.120	0.111	0.122	0.122	0.122	0.104	0.104	0.105	0.122	0.127	0.116	0.123	0.124	0.122

SOURCE: NCHS, National Vital Statistics System, Mortality.

Table IV. Estimated parameters α and β used for predicting m_x and starting age of modeled age span: United States Life Tables, 2013

Parameter	Total			White			Black			Non-Hispanic white			Non-Hispanic black		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Starting age	85	85	85	85	85	85	84	83	84	85	85	85	84	83	84
$\ln(\alpha)$	-13.19488	-12.95165	-13.87197	-13.45315	-13.41695	-14.08457	-10.52752	-10.67005	-11.49039	-13.41804	-13.37556	-14.05327	-10.44690	-10.56563	-11.26485
(SE)	(0.117)	(0.198)	(0.105)	(0.098)	(0.121)	(0.097)	(0.157)	(0.261)	(0.090)	(0.096)	(0.119)	(0.096)	(0.152)	(0.262)	(0.127)
β	0.1276045	0.1270502	0.1339821	0.1306582	0.1324124	0.1365195	0.0970287	0.1011994	0.1066907	0.1302963	0.1319865	0.1361968	0.0961915	0.1001079	0.1042320
(SE)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.003)	(0.001)

NOTE: SE is standard error.

SOURCE: NCHS, National Vital Statistics System, Mortality.

The probability of death is extrapolated to age 120 in order to estimate the life table population until no survivors remain. This information is then used to estimate L_x for ages 100–120, which is used to close the table with the age category 100 and over, combined (discussed below).

Probabilities of dying at the oldest ages for the Hispanic population

As noted above, Medicare data are unreliable for the Hispanic population due to inconsistencies in the Medicare race and ethnicity classification system. As a result, it was necessary to use other methods to estimate mortality at the oldest ages for this population. Beyond age 80, mortality estimates based strictly on vital statistics for the Hispanic population are too low, despite correction for ethnic misclassification on the death certificate.

A consistent finding across diverse studies has been that Hispanic mortality in the adult and advanced ages varies between approximately 80% and 89% from that of the non-Hispanic white population (13,14,25,29). The Brass relational logit model takes advantage of the relationship between Hispanic and non-Hispanic white mortality previously identified and has been widely and successfully used to predict the mortality of one population relative to another at the older ages (3,30–32). Using the age-specific mortality pattern of the non-Hispanic white population as the "standard," the Brass relational logit model is used to predict Hispanic mortality in the older ages. The standard is fit to Hispanic data in the age interval 45–80, and the predicted parameters are used to estimate the probabilities of death for ages 76–100. This method allows the relationship between the two populations in the younger ages to be carried over to the older ages (3,30–32).

The Brass relational logit model expresses the age-specific mortality pattern of a population of interest as a function of the age-specific mortality pattern of a standard population and is expressed as:

$$\bar{Y}_x = \alpha + \beta Y_x^s \quad [12]$$

where \bar{Y}_x is the predicted logit of the probability of death, q_x , in the population of interest, that is,

$$\text{logit}[q_x] = \ln \left[\frac{q_x}{1 - q_x} \right]$$

Y_x^s is the logit of the probability of death in the standard population, q_x^s , that is,

$$\text{logit}[q_x^s] = \ln \left[\frac{q_x^s}{1 - q_x^s} \right]$$

α is the predicted parameter that measures the level of mortality of the population of interest relative to the standard population, and β is the predicted parameter that measures the slope of the mortality function of the population of interest relative to the standard population (3,30–32). Table V shows values of predicted α and β and their standard errors.

A maximum-likelihood generalized linear model estimation procedure is used to fit equation [12] in the age range 45–80. The resulting predicted parameters α and β were then used to estimate the predicted probability of death for ages 76–120 in the Hispanic

Table V. Estimated Brass relational logit model parameters α and β for Hispanic-origin population, 2013

Parameter	Total (SE)	Male (SE)	Female (SE)
α	−0.2588280 (0.023)	−0.2317119 (0.044)	−0.2037050 (0.020)
β	1.0036190 (0.006)	0.9982913 (0.011)	1.0275310 (0.005)

NOTE: SE is standard error.

SOURCE: NCHS, National Vital Statistics System, Mortality.

population. The value q_x was predicted to age 120 in order to estimate the life table population until no survivors remain, as was done for the other population groups. This information is then used to estimate L_x for ages 100–120, which is used to close the table with the age category 100 and over, combined (discussed below).

Predicted \bar{q}_x is estimated by transforming its logit, \bar{Y}_x , back as follows:

$$\bar{q}_x = \frac{\exp[\bar{Y}_x]}{1 + \exp[\bar{Y}_x]} = \frac{\exp[\alpha + \beta Y_x^s]}{1 + \exp[\alpha + \beta Y_x^s]} \quad [13]$$

To ensure a smooth transition from vital q_x^v and predicted \bar{q}_x , the two were blended from ages 76 to 80 with a graduating process as follows:

$$q_x = \frac{1}{6} [(81 - x) q_x^v + (x - 75) \bar{q}_x] \quad [14]$$

when $x = 76, \dots, 80$.

Finally, to close the table at age 100 and over (combined), ${}_0q_{100}$ is set equal to 1.0 because all survivors to this age will die at some point in the open-ended age interval. Once q_x is obtained for each single year of age, the other life table functions are easily calculated.

Calculation of remaining life table functions for all groups

Survivor function (l_x)

The life table radix, l_0 , is set at 100,000. For ages greater than 0, the number of survivors remaining at exact age x is calculated as:

$$l_x = l_{x-1} (1 - q_{x-1}) \quad [15]$$

Decrement function (d_x)

The number of deaths occurring between ages x and $x + 1$ is calculated from the survivor function:

$$d_x = l_x - l_{x+1} = l_x q_x \quad [16]$$

Note that ${}_0d_{100} = {}_0l_{100}$ because ${}_0q_{100} = 1.0$.

Person-years lived (L_x)

Person-years lived for ages 1–99 is calculated assuming that the survivor function declines linearly between ages x and $x + 1$. This gives the formula

$$L_x = \frac{1}{2} (l_x + l_{x+1}) = l_x - \frac{1}{2} d_x \quad [17]$$

For $x = 0$, the separation factor f is used to calculate L_0 :

$$L_0 = fl_0 + (1 - f)l_1 \quad [18]$$

Finally, ${}_{\infty}L_{100}$ is estimated as the sum of the extrapolated L_x values for ages 100–120.

Person-years lived at and above age x (T_x)

T_x is calculated by summing L_x values at and above age x :

$$T_x = \sum_{x=0}^{\infty} L_x \quad [19]$$

Life expectancy at age x (e_x)

Life expectancy at exact age x is calculated as

$$e_x = \frac{T_x}{l_x} \quad [20]$$

Abridging the complete life table

An abridged or collapsed version of the complete life table can be easily calculated in which life table functions are shown for 5-year rather than single-year age intervals. It is often desirable to summarize the life table and save space when publishing life table data by single years of age. The abridgement of the complete life table is simplified by an important property of three of the six life table functions. The l_x , T_x , and e_x functions describe exact age x , that is, the beginning of the age interval x to $x + n$ (where n denotes the length of the age interval; for 5-year age intervals, $n = 5$). Life

expectancy at age 20 (e_{20}), for example, has the same value regardless of whether the age interval is 20–21 or 20–25. Thus, the values l_x , T_x , and e_x can be extracted at 5-year intervals from the complete life table and placed into the abridged life table (compare l_x , T_x , and e_x in Table VI with the same functions in Table 1). It is also illustrative to compare values for e_x and l_x in Tables A and B with their corresponding values presented in Tables 1–18. The q_x , d_x , and L_x functions, in contrast, describe the age interval x to $x + n$. In fact, for abridged life tables, the notation for these functions is different (${}_nq_x$, ${}_nd_x$, and ${}_nL_x$, respectively). Thus, ${}_5q_{20}$ is the probability of dying between ages 20 and 25 and will obviously be somewhat larger than q_{20} , the probability of dying between ages 20 and 21. Taking this into account, ${}_nq_x$, ${}_nd_x$, and ${}_nL_x$ must be recalculated in the abridged life table. It is simplest to begin with ${}_nd_x$. The calculations are made for all but the final age interval as follows:

$${}_nd_x = l_x - l_{x+n}$$

$${}_nq_x = \frac{{}_nd_x}{l_x}$$

$${}_nL_x = T_x - T_{x+n}$$

Note that for the open-ended interval, ages 100 and over: ${}_{\infty}d_{100} = l_{100}$, ${}_{\infty}q_{100} = 1.0$, and ${}_{\infty}L_{100} = T_{100}$. Table VI shows each of the life table functions for the 2013 U.S. total population abridged from Table 1.

Table VI. Life table for the total population: United States, 2013

Age (years)	Probability of dying between ages x and $x + n$	Number surviving to age x	Number dying between ages x and $x + n$	Person-years lived between ages x and $x + n$	Total number of person-years lived above age x	Expectation of life at age x
	${}_nq_x$	l_x	${}_nd_x$	${}_nL_x$	T_x	e_x
0–1	0.005958	100,000	596	99,475	7,882,618	78.8
1–5	0.001021	99,404	102	397,371	7,783,144	78.3
5–10	0.000590	99,303	59	496,355	7,385,773	74.4
10–15	0.000705	99,244	70	496,080	6,889,418	69.4
15–20	0.002227	99,174	221	495,400	6,393,338	64.5
20–25	0.004158	98,953	411	493,788	5,897,939	59.6
25–30	0.004869	98,542	480	491,535	5,404,151	54.8
30–35	0.005727	98,062	562	488,941	4,912,616	50.1
35–40	0.007072	97,500	690	485,855	4,423,675	45.4
40–45	0.009949	96,811	963	481,799	3,937,820	40.7
45–50	0.015604	95,848	1,496	475,781	3,456,021	36.1
50–55	0.024272	94,352	2,290	466,384	2,980,241	31.6
55–60	0.035563	92,062	3,274	452,547	2,513,857	27.3
60–65	0.050060	88,788	4,445	433,361	2,061,310	23.2
65–70	0.071557	84,343	6,035	407,411	1,627,949	19.3
70–75	0.109103	78,308	8,544	371,366	1,220,538	15.6
75–80	0.170357	69,764	11,885	320,681	849,173	12.2
80–85	0.271029	57,879	15,687	251,582	528,492	9.1
85–90	0.426255	42,192	17,985	166,114	276,910	6.6
90–95	0.615875	24,208	14,909	81,235	110,796	4.6
95–100	0.788027	9,299	7,328	25,093	29,561	3.2
100 and over	1.000000	1,971	1,971	4,469	4,469	2.3

SOURCE: NCHS, National Vital Statistics System, Mortality.

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